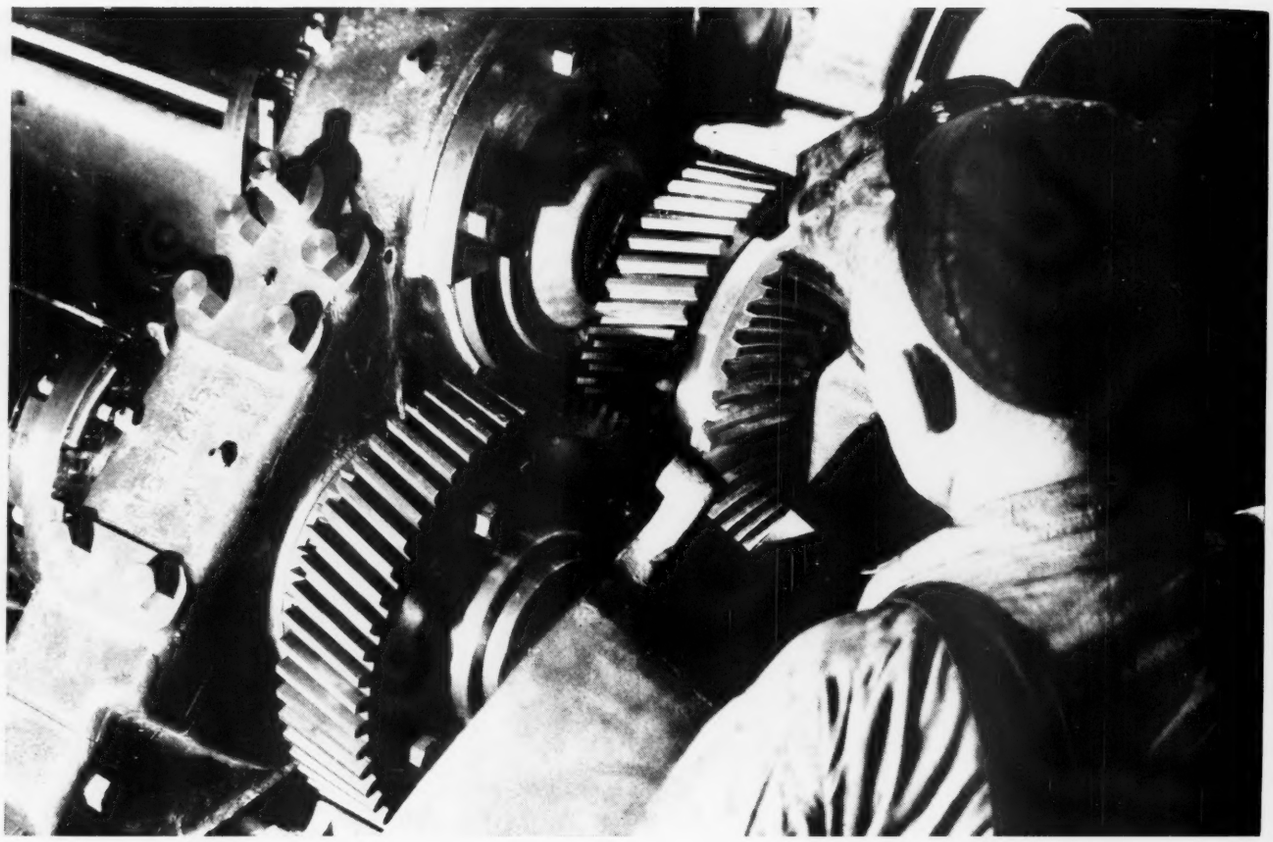
PRINTING EQUIPMENT ENGINEER

Edited for those concerned with the use and care of Printing Equipment

MAY 1932

STEADY POWER



Goss construction, with spiral and helical gears, reduces vibration, noise and wear. Three teeth on one gear gradually engage three teeth on the other — instead of the single engagement of straight teeth. The overlapping action and continuity of tooth contact transfers the load steadily and quietly. Backlash troubles are prevented. The possibility of tooth breakage is practically eliminated. There is steady flow of power, quiet and smooth operation of the press, less wear and added strength.

Built better, of better materials, Goss Presses every day prove their rugged dependability in the leading pressrooms of the world. For fifty years, Goss has built stronger, faster, better presses, and today the Goss High Speed Heavy Duty Press excels all its predecessors.

GOSS

STRAIGHT LINE

GOSS HIGH SPEED

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THE GOSS PRINTING PRESS COMPANY OF ENGLAND, LTD. · LONDON

SIX DAY PAPERS

The 20 LEADERS in Local Linage....

New York Sun

Hartford Times

Philadelphia Bulletin

Newark Evening News

New York Evening Journal

Montreal Daily Star

Chicago Daily News

Toronto Daily Star

Toronto Telegram

Providence Bulletin

Wilkes-Barre Times-Leader

Scranton Times

Akron Beacon-Journal

Cleveland Press

Rochester Times-Union

Los Angeles Herald

Wilkes-Barre Record

New York World-Telegram

McKeesport Daily News

Lansing State Journal

All Twenty are users of the LUDLOW system of Display Composition

LOCAL DISPLAY represents the most important advertising composition problem of the daily newspaper.

Among the six-day newspapers each and every one of the first twenty in local linage in 1931 (according to ranking by the Editor & Publisher) find the Ludlow indispensable equipment in their composing rooms.

The Ludlow provides the one right method for setting newspaper display composition. The first direct operating expense is incurred when the operator steps to the Ludlow to set a display line.

There is no type to cast, no storage system to maintain, and no cases to replenish. The equivalent of an unlimited supply of always new and unbroken type of the best and newest design is always available to the compositors in a Ludlow equipped plant.

Full particulars regarding the advantages the Ludlow will offer in YOUR composing room await your request.

LUDLOW TYPOGRAPH COMPANY

2032 Clybourn Avenue
CHICAGO, ILLINOIS

Set in Ludlow Karnak Light and Medium

May, 1932

HEADQUARTERS

FOR THE A. N. P. A. MECHANICAL CONFERENCE

are established at Cincinnati's largest, most centrally located hotel . . . right on Fountain Square . . . convenient to depots, highways, bus and car lines, theatres, stores, etc. To have the best possible time at the convention, stop at the Greater Gibson.

C. C. SCHIFFELER,
Managing Director

◆

1,000 rooms, each with bath . . . five famous restaurants, including beautiful air-cooled Roof Garden . . . 70% of all rooms at $2.50, $3, $3.50 and $4 . . . restaurant rates correspondingly reasonable . . . garage.

The Greater
HOTEL GIBSON
CINCINNATI

PRINTING EQUIPMENT ENGINEER

TRADE MARK REGISTERED U. S. PATENT OFFICE. ESTABLISHED 1910

VOLUME 44
MAY, 1932
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Let others also read *The Engineer*

After you have read this copy, pass this magazine along to the other men in your organization. They will undoubtedly get helpful ideas from its pages.

Check in left column after reading. Note articles of interest.

☐ *Composing Room Superintendent*

☐ *Superintendent Press Room*

☐ *Chief Composing Room Machinist*

☐ *Superintendent Stereotype Foundry*

☐ *Monotype Department*

☐ *Photo Engraving Department*

☐ *Superintendent Electrotype Department*

☐ *Foreman Lithographing Department*

☐ *Bindery Foreman*

☐ *Production Manager*

☐ *Mechanical Superintendent*

☐ *Manager*

☐ *Purchasing Agent*

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Accepted CCA Applicant

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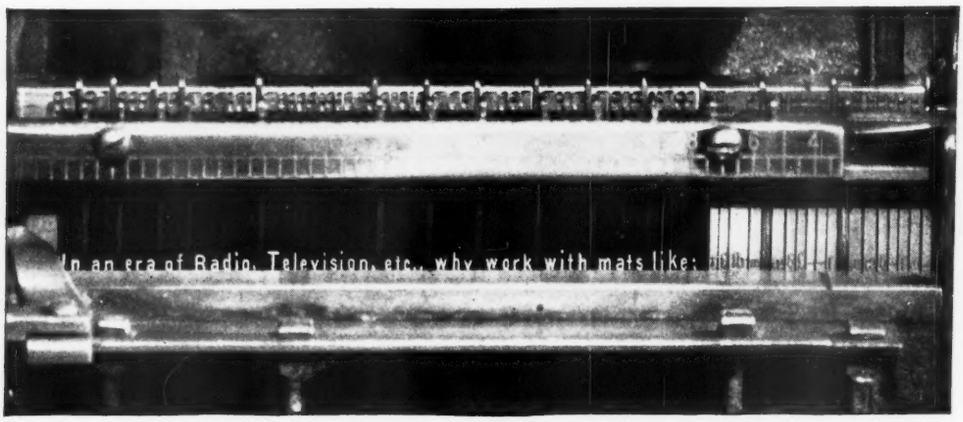


Reference characters have always been on the matrices!

BLACK & WHITE *makes them visible* — AT A GLANCE

GLANCING at *the mats* in the assembler serves only to determine whether or not the line is tight enough to cast. But when reference characters are easily discernible, as processed by Black & White, that glance at each line serves also as a check on errors.

Only by making reference characters *visible* AT A GLANCE can the operator check and correct errors in the normal operation of the machine and without retarding his normal output.

Why not invite us to prove, right in your own plant, how the Black & White Contrast Matrix will reduce *your* error-making at least 25%. There is absolutely no obligation involved—Write!

Matrix Contrast Corporation

(Sole Licensees of the Percy L. Hill Black and White Patents No. 1466437, held valid by U. S. District Court, Eastern District of New York. Infringers will be vigorously prosecuted.)

33 West 42nd Street, New York

BLACK & WHITE

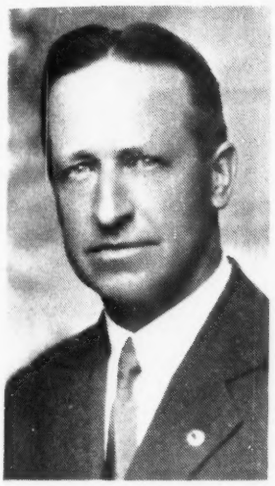
Contrast Matrix

"Contrast Provides VISIBILITY"

PRINTING
EQUIPMENT
ENGINEER
May, 1932

Newsprint Waste Reduced

Volume Has Been Cut to Less Than Three-Fourths Former Amount By A. N. P. A. Publishers Reporting to Mechanical Department



Walter E. Wines, Manager, Mechanical Department, A. N. P. A. Submits Annual Report and Gives a Summary of the Department's Activities.

THE annual report of W. E. Wines, Manager of the Mechanical Department of the American Newspaper Publishers' Association, which was presented to the A. N. P. A. convention in New York, April 26-29, is of interest to newspaper mechanical executives, as it deals with the work of the department in relation to the problems of newsprint, news ink, newsprint waste reduction (which is, perhaps, the most important activity of the department), paper handling, as well as the investigational work in connection with newsprint and news ink being conducted by the technical director of the Government Printing Office. New devices and processes and color printing in newspapers are mentioned in the report.

MAIN OBJECTIVES OF DEPARTMENT

Mr. Wines' report states that the Mechanical Department has two main objectives—improvement of the process of newspaper printing and the reduction of expense. Some of its undertakings embrace both objectives, one outstanding example of which is the Mechanical Conference held in June each year and which is attended by mechanical executives from various parts of the United States and Canada. At the June, 1931, convention held in the Washington, D. C., Government Printing Office, Harding Hall, there was an attendance of 167, an increase of 10 per cent over the convention held the preceding year.

JOINT COMMITTEE ON NEWSPAPER PRINTING

Speaking of the Joint Committee on Newspaper Printing* Mr. Wines stated that it is a direct result of our Mechanical Conference. Since the last Annual Meeting this Joint Committee has issued its third report, "The Complexities of Newspaper Printing," which, like the previous reports, was printed on newsprint, on a newspaper press, from stereotype plates. This report demonstrates graphically the effects of various imperfections or shortcomings in the processes of newspaper printing, and, from such indications as the Department has received, has been of definite value and benefit to the membership.

COMMITTEE WORK LEADS TO I. A. E. ENDORSEMENT

"As a result of the Committee's work, the International Association of Electrotypers has officially endorsed a standard thickness of electrotypes of 0.105 in. and has recommended a standard formula for electrotype backing metal. Another definite result of its work in the field of specifications for agency material is a resolution adopted by the last Mechanical Conference in favor of electrotypes in preference to mats for newspaper advertising production, and favoring mats, when they are used, produced under wet mat manufacturing conditions.

SUITABILITY OF COPY FOR REPRODUCTION IN NEWSPAPERS

"The Committee is now engaged in a study of the methods of reproducing advertising copy in newspapers, and of the copy itself from the standpoint of suitability for reproduction in newspapers. Other items on the program are the preparation of a manual of instructions or suggestions for the newspaper mechanical departments, and a similar manual of specification recommendations covering material suitable for newspaper use, for agency production men."

INVESTIGATIONAL WORK AT G. P. O.

Mr. Wines describes the investigational work on news ink

*The Joint Committee is composed of representatives of the A. A. A. A., publishers' representatives of the A. N. P. A., and mechanical executives of member papers.

Thanks, Mr. Gilcrest

Newark, Ohio, April 11, 1930.

Printing Equipment Engineer,
1370, Ontario Street,
Cleveland, Ohio.

I have been receiving PRINTING EQUIPMENT ENGINEER since its beginning and have obtained much useful information from it. When finished with it, I pass it on to department heads.

Yours very truly,
THE ADVOCATE PRINTING COMPANY,
J. S. GILCREST, *Supt.*

and newsprint which has been continued at the Government Printing Office under the supervision of B. L. Wehmhoff, Technical Director, and a chemist employed by the Association†. The Mechanical Department has given valuable assistance to members on their ink and paper problems.

An interesting bit of information taken from Mr. Wines' report is as follows:

"The Government Printing Office has recently obtained from Germany an instrument, the only apparatus of the kind in the United States, for measuring the smoothness of the surface of paper. The results obtained to date are encouraging, but it is too early to predict how valuable it may ultimately prove. Tests made on numerous samples from various mills show wide variation of the surface. As the surface is that on which printing is done, it is obviously desirable to be able to determine its character with some degree of precision. If this instrument should prove as practically useful as it is hoped, the paper mills can be supplied with a quantitative measurement of the surface of paper satisfactory for newspaper printing, which the mills should strive to obtain."

NEW DEVICES AND PROCESSES

"The Department makes a special effort to investigate new devices and processes which may have a useful place in newspaper printing. Those reported upon during the last year are: The Carlsen process of making a halftone engraving from a dry plate negative; the Howey engraving machine which produces an engraving on metal directly from a photograph through the medium of a photo-electric cell; Good's keyboard which converts any Linotype or Intertype keyboard into one of the usual typewriter arrangement; the Semagraph, another device utilizing the photo cell, which operates a keyboard composing machine from typewritten copy. Some—possibly all—of these inventions will be exhibited at the Mechanical Conference in June. Your Manager attended a demonstration in Chicago of the Renck process.

COLOR PRINTING

"In view of the present widespread interest in the use of color in newspaper advertising, the Department has issued a report designed to assist members in deciding upon a course of action. A questionnaire containing eight pertinent questions was mailed to all daily newspapers in the United States and Canada, about 1940 in number, and an abstract of the 834 replies, as well as 119 voluntary comments, was published in Mechanical Bulletin No. 59. The Department, as a result of its work in this field, has compiled a list of more than 300 daily newspapers equipped to carry color advertising."

NEWSPAPER WASTE REDUCTION

Organized and concentrated effort in seeking to help in the reduction of newsprint waste, has constituted the most important activity of the department for the year. At several of the conventions this topic has held a most important place in the deliberations and mechanical executives have been intensely interested in evolving ways and means for control.

The report states: "That this campaign has been effective is apparent upon even the most casual comparison of the earlier figures with those recently compiled, all of which have been published in our bulletins.

"The average grand total percentages in the first newsprint waste bulletin, issued in April, 1927, compared with the corresponding figures in the bulletin issued last month, show that newsprint waste has been reduced, by the newspapers reporting, to less than three-fourths of its former amount. The number of newspapers reporting has increased so that more than one-third of the membership is now cooperating in this work.

"A reduction of 1.1 per cent (from 4.24 per cent to 3.16 per cent) of total tonnage may seem small, but when converted into money it becomes more impressive. This reduction in newsprint waste means at least 50 cents on each ton of newsprint used; it means a yearly saving of $500 on each 1,000 tons of the annual newsprint consumption. If applied to the 2,500,000 tons used annually by the members of the A. N. P. A., it would represent a saving of $1,250,000 per year.

"To just what extent the Mechanical Department has been a factor in bringing about this reduction cannot, of course, be determined exactly but, if even for only a small fraction of the results obtained, it would be sufficient to meet the entire annual cost of operation of the Department several times over. It is a fact, however, that in many cases the Department's advice has been directly solicited and that material savings have resulted from its assistance to members.

"One newspaper which concentrated on its newsprint waste less than a year ago, has, under the advice of the Traffic and Mechanical Departments working in conjunction, reduced its waste from 4.73 per cent to 2.30 per cent, resulting in a dollars and cents saving of about $20,000 on its annual consumption of more than 16,000 tons. Another, whose consumption is 8,000 tons of newsprint annually and whose waste is now nearly 6 per cent, has recently requested the aid of the Department and, in the light of past experience, it seems probable that a reduction of about $12,000 may be effected.

"It is suggested that some publishers who have not given this subject careful attention could do so with advantage to themselves.

REPORT ON PAPER HANDLING

"The Traffic and Mechanical Departments have continued their joint study of the transport and handling of roll paper, and the preparation of the resulting report has now been started. The difficulties attendant upon this project have been very much greater than anticipated when the work was first contemplated, but in spite of that a large amount of information and data has been collected, chiefly by actual observation in newspaper plants, freight yards, and paper mills. A valuable collection of original photographs has been assembled, and with this fund of information available, the report should constitute a valuable illustrated reference manual.

SURVEY OF TYPE PAGE SIZES AND PAPER ROLL WIDTHS

"The great number of letters from members asking the Department for information or advice concerning proposed changes in page make-up and paper size, and the possible economy resulting from such changes, indicated a need for more comprehensive data on this point. A tabulation of type page sizes and paper roll widths was issued in Bulletin No. 35 early in 1930. In view of the changes which have been made in the interim, a revision is now in preparation and will be published shortly."

†Mr. Wehmhoff's progress report was presented to the Washington conference and was published in the July-August issues of the ENGINEER.

Elect Officers

At a meeting of the stockholders of R. Hoe & Co., Inc., April 12, the following directors were unanimously re-elected: Boudinot Atterbury, John W. Cutler, C. W. Gaskell, Charlton B. Hibbard, A. I. Hoe, R. H. Macdonald, Jr., W. E. McCaw, E. A. Potter, Jr., H. R. Swartz, H. M. Tillinghast.

At a meeting of the board of directors, April 13, all officers were re-elected as follows: H. R. Swartz, President; H. M. Tillinghast, Vice-President; H. V. Ball, Vice-President; C. W. Gaskell, Vice-President; A. J. Gallien, Vice-President; J. M. Masterson, Secretary; L. Roehm, Assistant Secretary; A. W. Lishawa, Treasurer and Assistant Secretary, and C. E. Littleton, Assistant Treasurer.

A. N. P. A. Mechanical Conference

THE sixth annual mechanical conference of the Mechanical Department, A. N. P. A., will be held this year in Cincinnati, Ohio, on Tuesday, Wednesday and Thursday, June 7-8-9. The Hotel Gibson, newest and largest hotel in the city, has been selected as official headquarters.

Application has been made by Secretary Wines for reduced railroad fares on the certificate plan, contingent upon securing 100 certificates, for the benefit of those who come to the convention by train.

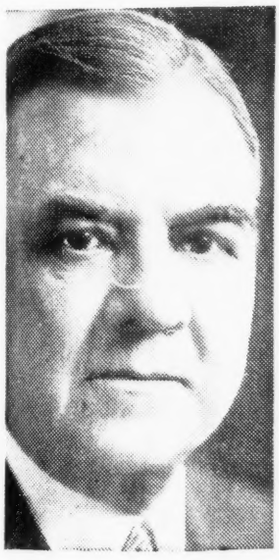
It is hoped that exhibits may be arranged for the Howey Photo-Electric Engraving Machine, the improved Teletypesetter, and the recently-announced Semagraph which is operated through the medium of the photo-electric tube, the Carlsen process of making a half-tone engraving from a dry plate negative, and Good's keyboard which converts any linotype or intertype keyboard into one of the usual typewriter arrangement.

In order to demonstrate adequately the justice of complaints of advertising agency men regarding the great variation in newspaper printing from identical advertising material, the Joint Committee assembled specimens of printed national advertisements for exhibition at the last Mechanical Conference. The exhibit proved of so much interest that it was unanimously voted to have a similar exhibit at the Cincinnati Conference.

Arrangements for the Speakers' program are incomplete as yet, and it is too early to announce the program in detail. B. L. Wehmhoff, technical director of the Government Printing Office, will give his third progress report on the study of newsprint and news ink. These technical investigations have been of inestimable value to the layman.

George W. Speyer, manager of the technical production department, J. Walter Thompson Co., Chicago, will present a paper on what the agency does in the preparation of a national advertising campaign. This address should give the mechanical executive an appreciation of the details involved and the work expended in preparing the copy or plates which are received later in the newspaper plant. Judging Mr. Speyer by some of his previous statements he should have something of educational interest for the delegates.

Tribute by Newspaper Executives



Theodore T. Ellis, Vice President Chicago Daily "News," who has completed fifty years' service as newspaperman.

THEODORE T. ELLIS, vice president of the Chicago Daily *News*, was honored upon his fiftieth anniversary in newspaper work at the Medinah Athletic Club, Chicago, Thursday evening, April 21. More than one hundred leaders in mechanical production of American newspapers came to attend the testimonial banquet.

Roger M. Andrews of the Detroit *Times* was toastmaster, and introduced Major George L. Berry as the keynote speaker. Prominent among the speakers, of which there were only a few, were John C. Mahoney, mayor of Worcester, Mass., and Anton J. Cermak, mayor of Chicago. The master of ceremonies was Julius Tannen.

Mr. Ellis is credited with having a zeal for studious research combined with inventive genius, and executive ability for pushing his ideas to completion. He was born in St. Louis, Mo., in 1867. His first acquaintance with printer's ink and the roar of presses was made there in March, 1882. At this time he took up the study of stationary engineering.

In 1886 he joined L. W. Scripps, founder of the Scripps newspapers on the St. Louis *Chronicle*. In the same year the wanderlust "bug" struck him, by December he was in China, and in just a little while he was enlisted on the U. S. gunboat Monocacy. He served a full enlistment period on board the Yankee gunboat. He re-enlisted and served on the U. S. ship Essex. In May, 1889, he received his second honorable discharge. Mr. Ellis then made several voyages across the Atlantic in a Leyland Line steamship. In England he settled down for a while and worked for the Caxton Publishing Company.

In 1890 he became foreman of the pressroom of the Brockton (Mass.) *Enterprise*. The routine of getting the paper to press did not satisfy his tirelessly inquisitive mind. Here he began intensive studies of the relationship of the impression and the plate cylinder which he carried through to notable results in later years.

In 1897 he became a member of the pressroom force of the Boston *Herald*, and in his new position found time to carry on his studies of better printing.

The famous blanket business which is now the New England Newspaper Supply Co., was started in Worcester by Mr. Ellis in 1905. At this time he entered into additional studies in manufacturing chemistry as affecting rubber and cork.

In 1919, Mr. Ellis purchased the Worcester *Telegram* and combined it with the Evening *Gazette*. In 1925, on the advice of physicians, he disposed of his newspaper properties.

His acquaintanceship with Col. Frank Knox dates from 1921, when they met during the formation of the New England Newspaper Publishers' Association.

In August, 1931, the purchase of the controlling stock of the Chicago *News* was announced. Col. Knox became president and publisher and Mr. Ellis became vice president.

Semagraph's Electric Eye Very Accurate

By LeGette Blythe*

Since the first public demonstration of Buford L. Green's marvelous invention, the Semagraph, held at The Charlotte *Observer*, Charlotte, N. C., March 28, the story of which was carried in the April number of Printing Equipment Engineer, the success of the Semagraph has become all the more assured.

During the week of April 25, Mr. Green and his financial sponsor and partner, Curtis B. Johnson, publisher of the Charlotte *Observer*, have demonstrated the device in New York before leading newspaper and news service executives of the nation and they have shown the same enthusiasm as those who first saw it demonstrated.

The Semagraph, it should be pointed out to those who perhaps did not see the April number of Printing Equipment Engineer, is a device for the automatic operation of Linotypes and Intertypes. Those who have seen it work, including the foremost mechanical executives of the newspaper industry of America, declare it has been perfected far beyond the degree they had expected.

The Semagraph has a "brain." It's brain is the element which has done so many seemingly impossible things—the photo electric cell. And it is this cell that is the basic foundation upon which Mr. Green has built his remarkable mechanism.

This Semagraph, as was explained in the April issue, eliminates the Linotype keyboard and the cams operating therein. It sits in the position occupied by the keyboard but actually does not require as much space, since it does not project outward as far as the keyboard.

Latest Photo of Buford L. Green, Inventor of the Semagraph which may be demonstrated at the A. N. P. A. Mechanical Conference to be held in Cincinnati.

The evidence of this "brain" in the Semagraph is seen in its almost human—we might say weird ability of selectivity. The thing actually appears to think. In fact, those who have seen it work declare it comes as near thinking as any mechanism ever built. It is this selective ability that is the principal likeness of the machine to the human operator. It even goes him one better, though, because it never thinks wrongly. It never misspells. It never punctuates differently from the copy. It composes what is given to it.

The Semagraph has not been described fully to the general public interested in the mechanics of the printing industry, although those who have seen it operate have been initiated into all its intricacies.

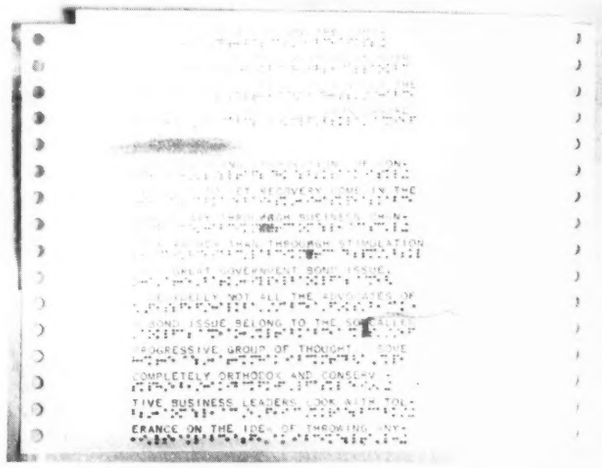


Photo of copy prepared for use in the Semagraph. The lines are printed on the specially prepared paper in units and of the right length to justify properly in the line-composing machine. The copy may be edited by anyone not familiar with the code employed.

In brief, however, its operation is in this general manner: Especially prepared copy, typed upon a Remington-Rand typewriter perfected for that particular usage, is fed and by perforations on each margin is carried through the machine, in the general manner of a motion picture film. These perforations, however, have nothing to do with the typesetting operation. They are the mere mechanical means of

*Charlotte *Observer*, Charlotte, North Carolina.

Investments

By William Feather

Andrew Carnegie pointed out a long time ago that no business man needs to look outside his own factory for good investments. Many of us withdraw money needed in our own underfed enterprises and place it in tempting speculations and investments outside offering perhaps 7 or 8 per cent. Yet 50 per cent profits are common when going enterprises invest in labor-saving devices.

As individuals and employes we are equally blind to the unexploited equities within ourselves. Books and magazines that contain valuable information can be purchased at trifling sums just as farmers add materially to their incomes if they use the knowledge available in farm papers and government bulletins.

It's the old story—the gold mines are within us and around us. As a noted speaker used to say, "Acres of diamonds are in our own backyards."

turning up line after line of copy. The Semagraph does not operate upon any perforation principle.

Instead, its one divergent, fundamental principle is the use of the photo-electric cell. This cell is situated under the copy and a tiny electric bulb throws a tiny ray of light through a pin-point aperture upon the copy. It is this light playing upon the coded copy which is either blocked or let through the white spaces and thereby on to the cell that results in the "selection" of the proper character.

The copy is written as any ordinary typewritten copy is written, with the exception that the machine writes only one line of type, corresponding exactly to the line that is to be set up on the machine. Beneath the ordinary letters or characters appears a dot code, either placed at various points or omitted in a six-space arrangement. The six spaces are three deep and two across. The "finger" of the machine, you might call it, runs down these three places, across and back up, across again and back down—and so on, to the end of the line, when the copy is turned up a line when the process is repeated. This electric eye, running down the line and across, and so on, stops at each of the six positions. The fact that it stops but a split-second and is off again on its way appears to give it a sort of jerky, "shimmy" motion. In reality, however, it stops at each place, "looks over" the situation, goes to the next place, does the same, and so on through the six positions.

Tiny pin-like parts, as a matter of fact, are either pushed forward or left in position (as the code dictates) as this eye moves through the positions and the arrangement of these pins effects the selection of the proper character.

The copy is unique in that it is legible to the layman who would not know the code. In fact, it would not be necessary to know the code in order to edit copy, prepare it or even supervise the operation of a number of the machines.

This photograph shows a letter blotted out. In this case the Semagraph in effect merely skips that letter. The blur of the pencil destroys the code—any code—and the Semagraph simply leaps over that space, from the standpoint of production. But it does not leap over it in the casting of the type. That is a very important point. In other words, this little almost human eye sees there has been a blunder and so it skips the place and keeps on about its business. That's the way it appears to the layman. But to Mr. Green it means that the light is unable to penetrate to the photo-electric cell because of the black pencil mark (which the dots are in the regular code—merely obstructions to the light) and there is no character to be selected and thereby no mechanical operation to be set in motion. Consequently nothing is done and the mechanics of the Semagraph, keeping it in continued operation, carry it along over these blank six spaces, one by one, and across to the next one, which is a properly made character. The only thing that is lost by the blunder of the person who prepared the copy is the time required by the "eye" to cover the six futile spaces and the electricity required for that futile operation—which, you will agree, is negligible.

Engineers You Hear About

Walter H. Haarhaus, Chief Composing Room Engineer, St. Louis "Post-Dispatch," Employs Controlled Maintenance System in the Plant of Which He Has Charge.

IN MANY of the large printing plants over the country, the problem of keeping the composing room machinery tuned to a high productivity pitch would become a serious matter if it were not for the employment of some orderly system. Of course, this maintenance problem is exactly like that existing in the smaller plant, the only difference being that there is "more of it." In the small plant the machinery is likely to receive the personal care of the one in charge of this work, but in the large plant it is apt to be an impersonal matter. For this reason, an orderly system must be used in maintaining line and type-casting machines, especially if the plant happens to be operated on a piece-work basis.

Walter H. Haarhaus, chief composing room machinist of the St. Louis *Post-Dispatch*, has instituted a controlled maintenance system which is used in caring for the forty-eight line-casting machines and the five Monotypes. In addition to this, Mr. Haarhaus uses an index system in the storage of machine supplies. A card shows when any part has been put in or taken out of storage. By this system he is enabled to determine immediately the number of each of the various parts on hand at any particular time, the machine upon which a part has been used, and just what parts might be in need of replacement for protective purposes.

Mr. Haarhaus originally worked as a maintenance man at the St. Louis *Times*. Later on, while he was engaged in absorbing the fundamentals of the photo-engraving trade, he became fascinated with the composing machines. As he had always been fond of high-grade machinery, he decided to become a line-casting machine engineer. He learned all about the business under the tutelage of Henry Walters in the *Times* plant. After working in various job and newspaper offices, including a year's service on the road for the Mergenthaler Linotype Co., he became attached to the *Post-Dispatch* composing room.

The composing room of the *Post-Dispatch* presents a scene of almost continuous activity comparable to any of our largest metropolitan newspapers. In order to fully service the plant, Mr. Haarhaus supervises a force of seven machinists, two apprentice helpers and three Monotype assistants.

Like most other active men, Mr. Haarhaus has hobbies. He spends considerable time at home caring for the vegetable garden and a varied assortment of flowers under the supervision of Mrs. Haarhaus. In season he likes to hunt and fish. We are not conversant as to Walter's prowess with wild game, but it may be said that, so far his reputation in this respect is unsullied.

Linotype Metal Pot Mouthpiece Lock-up

By R. R. Mead*

A recent improvement that will go far in facilitating the adjustment of the metal pot and its mouthpiece in relation to the mold is the pot leg bushing, Fig. 1, which incorporates provision for oiling, and six set screws arranged at strategical points for precise position which eliminates binding the bushing on the vise frame shaft. This is an important feature, effecting one of the major adjustments of the Linotype—the pot lock-up. The binding of bushings on the vise frame shaft has been, in many instances, the cause of poor lock-up and, as a result, metal back squirts.

The old construction, Fig. 2, was such that correct adjustment could be made if the screws were correctly manipulated and positioned without undue pressure on the bushing walls. It has functioned for many years, without trouble, when properly adjusted. Carelessness or a lack of knowledge of its importance when making adjustments, or a lack of simple attention at intervals in the way of cleanliness and

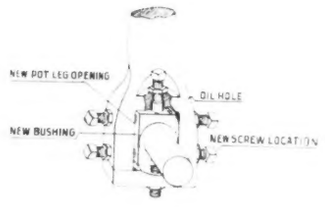


Figure 1

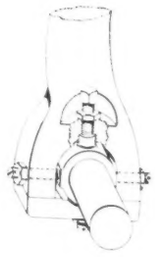


Figure 2

lubrication of moving parts, has resulted in criticism of the old construction from the standpoint of its being foolproof.

In order to illustrate the importance of this feature of pot leg bushing construction in relation to the lock-up, a detailed explanation for making the pot lock-up adjustment may be of interest.

Assuming that a change has been made, or a condition has arisen where the entire adjustment has to be made, or that, on the arrival of a new Linotype at its destination, it is found that the set screws have been changed in their position so as to destroy the factory setting, the procedure will be as follows:

Release the pot pressure setting by loosening the two nuts *a* and *b* Fig. 3, withdrawing them to the full extent.

One pot leg bushing is marked "R.H.," the other "L.H." Ascertain that they are located in their respective pot leg, facing the machine. (The bushing construction is shown in Fig. 1.) With the pot in position and the crucible resting evenly on its three vertical location points, with the two upper pot leg adjusting screws resting on the pot leg bushings, adjust the eight front and back pot leg adjusting screws so that the pot leg bushings are central with the openings in the pot legs.

There should be a clearance of from 0.001 in. to 0.002 in. between the right-hand face of the mold slide and the adjacent surface on the column shown at *aa*, Fig. 4, in order that the mold disk will be controlled in the casting position by the mold disk pins and the locating blocks on the vise frame.

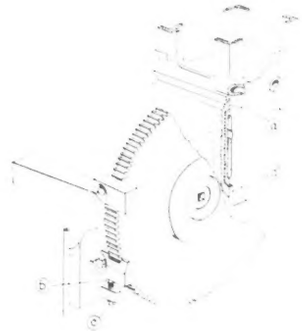


Figure 4

This adjustment can be made with the adjusting screw located in the front end of the mold gear arm, using a 0.001 in. to 0.002 in. feeler or paper and positioning the adjusting screw *b*, Fig. 4, at a point where the two surfaces before mentioned will just cause friction on the feelers or papers, then bind the screw in position with the jam nut provided *c*, Fig. 4.

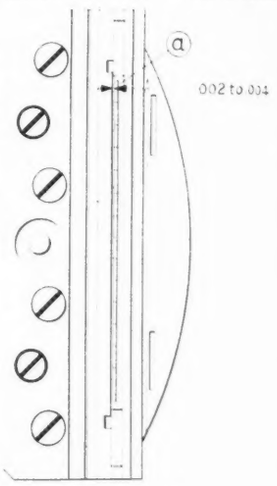


Figure 5

Pull the mold disk forward to ascertain that the locating pins enter the holes in the locating blocks correctly, without binding. If they do not, readjust the blocks. This is an important point and exactness is very essential.

With the ejector lever handle push the ejector blades forward until the ends are flush with the front edge of the mold. If the mold disk is properly located on its pins, the blades will be parallel with the edge of the mold body. This parallelism can be determined by feeling with a feeler 0.002 in. to 0.004 in. thick, *a*, Fig. 5.

(To be continued)

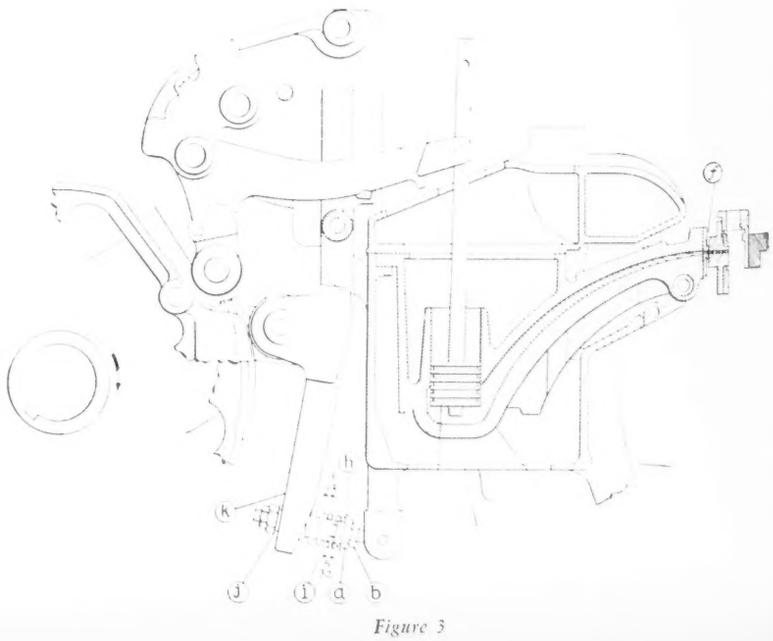


Figure 3

*Assistant Works Manager, Mergenthaler Linotype Co.

The Composition of Inks

By S. L. KARPELES*

(Concluded from April Issue)

Of the opaque white pigments, White Lead is the oldest. In recent years, however, it has given way to a great extent to other opaque whites. White Lead is a basic carbonate. Chremnitz White belongs to the same family as white lead but has certain superior qualities for printing ink use. Zinc White is an oxide of zinc made by roasting zinc at a high temperature. This pigment is not as opaque as White Lead but it has better working qualities. It has a decided advantage in not being affected by sulfide fumes which will readily turn White Lead or any other lead pigment to a dark brown. More popular even than Zinc White is another mixture of Zinc Sulfide and Barium Sulphate. It is as opaque as White Lead and also has the meritorius features of not being darkened by sulphur fumes. Our most modern and most opaque pigment is Titanium Oxide. It is absolutely impervious to acids, alkalies and gaseous fumes. There are other opaque white pigments the uses of which are too restricted for mention here.

YELLOW INKS

The next color to consider is Yellow. This portion of the printed spectrum is amply taken care of by our Chromes. Chrome Yellows vary in shade from the lightest primrose to the deepest orange. Chrome Yellows are formed by precipitating together lead acetate or nitrate with sodium di-chromate and the shade is varied between the two extremes by the proper manipulation of temperatures, acids and alkalis. Chrome Yellows as a class have great opacity and permanency, but because of their heavy gravity do not work particularly well on a press. The part this gravity plays may be easily understood when I explain that it requires approximately sixteen parts of Chrome Yellow to obtain the same body in the same quantity of varnish that one part of Carbon Black would give. In other words, the oil absorption of Carbon Black is sixteen times that of Chrome Yellow. These, of course, are extremes and other colors grade upward and downward in the scale of oil absorption so that the next time you notice a Chrome Yellow piling on the rolls or caking on the plate, just bear in mind that you have not as much vehicle or varnish in the Chrome Yellow as you have in the other and lighter colors.

Besides Chrome Yellows, Yellow Lakes are used extensively. Yellow Lakes and other lakes are made by the following process: Alumina Hydrate is made in a large vat and after being thoroughly free of contaminating salts, a solution of dye is poured on top of this hydrate base. The base absorbs a large quantity of the dye from the solution but not all of it and in order to bring down the remaining quantity of dye, we top it off with a salt which in this case is Barium Chloride. This salt has the property of forming an insoluble compound with the dye and it will now be noted that the water in the vat which was colored yellow is now perfectly clear and the precipitation complete. This color is then washed, filtered, dried and crushed and is ready to be made into ink. Yellow Lakes are very transparent and far more brilliant than the Chromes but they lack the permanency of Chrome Yellows. Their chief value lies in the fact that they can be printed over other colors without obliterating or hiding them as do Chrome Yellows.

ORANGE INKS

Orange inks are classified as follows: Chrome Orange, which is merely an orange shade of chrome yellow and of similar chemical composition. Orange Mineral, which is an oxide of lead, is similar in hue to Chrome Orange but is slightly brighter. Orange Lakes, such as Persian Orange Lake bear the same relation to Chrome Orange that Yellow Lakes do to Chrome Yellow, that is, they are more brilliant and transparent and as characteristic of many lake colors, Persian Orange is quite fugitive, but there has lately been developed an Orange Lake equally as bright as Persian Orange and almost as permanent as Chrome Orange.

In the field of reds, we must consider many more distinct types than we have in any other color. This is due to the fact that there is no one red which is so generally used as are Chrome Yellow in the Yellow, Carbon Black in the Black, and Iron Blue in the Blue.

Many of the more prominent reds in use today are:
Para Reds, both light and deep shades.
Lithol Reds, of yellow, medium and bluish shades.
Red for Lake C, of yellow shade and blue shade.

Eosines and Bromos.	Madder Lake.
Scarlet Lakes.	Alpha Red
Pigment Scarlets.	Lithol Rubine.
Toluidine Reds.	Fire Red.
Red Lake D.	Rhodamine.

All of the reds mentioned here are what are known as lake or aniline colors—but there is one red used in large quantities which is a mineral color. That red is English Vermilion. This is a sulfide of mercury and differs from the foregoing reds in that it is exceptionally opaque and every good cover red you have ever used contained a goodly proportion of English Vermilion. In the cheaper cover reds, Orange Mineral is often substituted for Vermilion but these inks lack the brilliancy and the opacity of those made from Mercury Vermilion.

VIOLET INKS

Practically all violets in use today are made from Methyl Violet. In days gone by, the printer would invariably avoid violets wherever possible because of the trouble in making this color dry and because it faded in a few hours when exposed to sunlight. Recently there has been developed in the color field a violet made from this same Methyl Violet dye, but by the Phospho-tungstic method of precipitation in place of the old Tannic Acid method. This method yields a very permanent violet and does not retard the drying of the ink. This same Phospho-tungstic method has been applied to many other colors until today we have not only permanent violet lakes but permanent green lakes, permanent jacque lakes and permanent peacock blues.

BLUE INKS

As mentioned before, the field of blues is well taken care of by the Iron Blues. These blues are chemically ferri-ferrocyanide which is manufactured by precipitating a solution of copperas with yellow prussiate of soda and then oxidizing the resultant milky white precipitate to a blue color. By changing this procedure slightly we obtain from this mixture various shades of blue such as Milori Blue, Bronze Blue and Prusian Blue. These Iron Blues are exceptionally permanent, quite brilliant and strong but they are not alkali proof. Alkali Blue, commonly known as Reflex or Roslyn Blue, is an exceptionally strong, bronzy, clean undertone blue and is used extensively for giving the better grades of blacks their rich golden tone. Ultramarine Blue is one of the oldest pigments

Continued on page 32

*Chief Chemist, Sinclair & Valentine Company, New York City. Address delivered before the Boston Club of Printing House Craftsmen.

Humidity—Moisture In Atmosphere

By MILTON E. HANSON*

PART III

AIR conditioning, while including humidifying in winter, in the broad sense involves cooling or dehumidifying in summer. In other words, air conditioning is the complete control of the wet and dry bulb temperatures at any desired point at all seasons of the year. Figure 6 shows a rear view of an air-conditioning unit that may be suspended from the ceiling. The air passes through the fan, over heating coils, through a spray chamber, through filters and spray eliminators and out at the front end of the unit. Figure 7 shows the interior of the spray chamber, arranged for humidifying only, with the fan and heating coils removed. The sectional pipe inside includes the mist spray nozzles and has two passages, one for compressed air and the other for water, terminating in a water float box on the outside, shown on the right side of Figure 6. Back of the spray pipe is shown part of the air filters and above them the spray eliminators at the front. The steam supply and compressed air is controlled by means of a dry and wet bulb operated thermostatic valve respectively. When it is also desired to cool or dehumidify, the mist spray pipe and compressed air are replaced with air washer rain spray nozzles of larger volume. Cold water is pumped in considerable quantity from a water cooler through the nozzles and flows back into the cooler. This cooler may be placed in any convenient spot together with a refrigeration machine to keep the water cold. The temperature of the cold water fixes the dew point in the spray chamber. No steam is admitted during periods

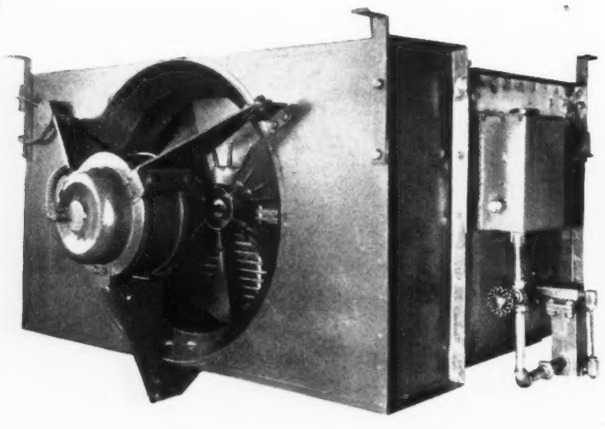


Figure 6

when cooling is required but as the season changes such as to require added heat the steam comes on, the refrigeration machine stops, the water pump keeps the water flowing through the spray nozzles only at intervals sufficiently frequent to maintain the desired wet bulb temperature. All this is done automatically with temperature-control instruments.

Certain factors are to be considered when dehumidifying or cooling. First, sufficient air must be circulated through the apparatus to transfer the heat leaking into the room from outside to the water, and by the same token, sufficient water must be handled by the pump to transfer this heat to the water cooler to be offset by the refrigeration machine. Last, the dew point must be determined and the refrigeration machine regulator set to keep the water spray temperature to that point. Supposing 72 deg. dry bulb temperature and a relative humidity of 50 per cent is required. What is to be the average temperature of the water sprays? Refer again to the humidity chart (Fig 2, March ENGINEER). Follow down the 72 deg. dry bulb temperature line until the 50 per cent R. H. vertical line is intersected. This point of intersection is found horizontally opposite the

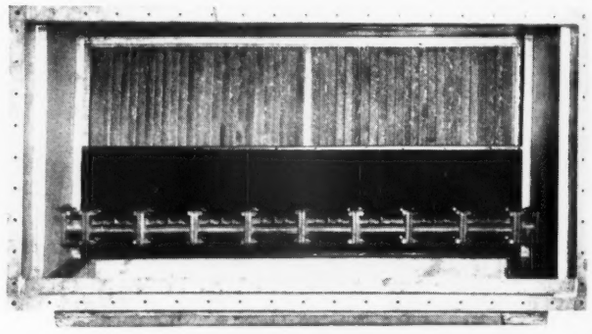


Figure 7

60 deg. wet bulb temperature at the left margin. From this point of intersection follow down parallel to the dew point lines to the left out to the margin and the dew point of 52 deg. is found. This should be the resulting temperature of both the water and the air as they both leave the spray chamber. As the air circulates in the room it gathers heat quickly. Should the air passing through the unit be more than sufficient and not rise to the 72 deg. control point the controller shuts off the fan at periods sufficient to balance the condition and maintain 72 deg. temperature as a room average. Since the dew point is fixed by the water temperature the wet bulb temperature always comes out right.

Cooling in summer for pressrooms while greatly to

*Mechanical and Chemical Engineer, Collingswood, N. J. Member American Society Mechanical Engineers.

Iowa Newspaper Composing Room Executives Meeting

The annual meeting of the Iowa Composing Room Executives will be held in Ottumwa on June 13-14. This association is composed of the mechanical executives (superintendents and composing room foremen) of the newspaper plants throughout Iowa. According to Secretary Carle, anyone outside of the state of Iowa is invited to attend the meeting. Further details will be announced in the June ENGINEER.

be desired from the comfort standpoint is really not necessary for conditioning paper or the prevention of static. The attendant mechanical heat given off from motors and presses together with great opportunity for heat infiltration from outdoors makes cooling rather expensive. Devices are fast coming into the market suitable for office and enclosed space cooling for which they are quite adaptable.

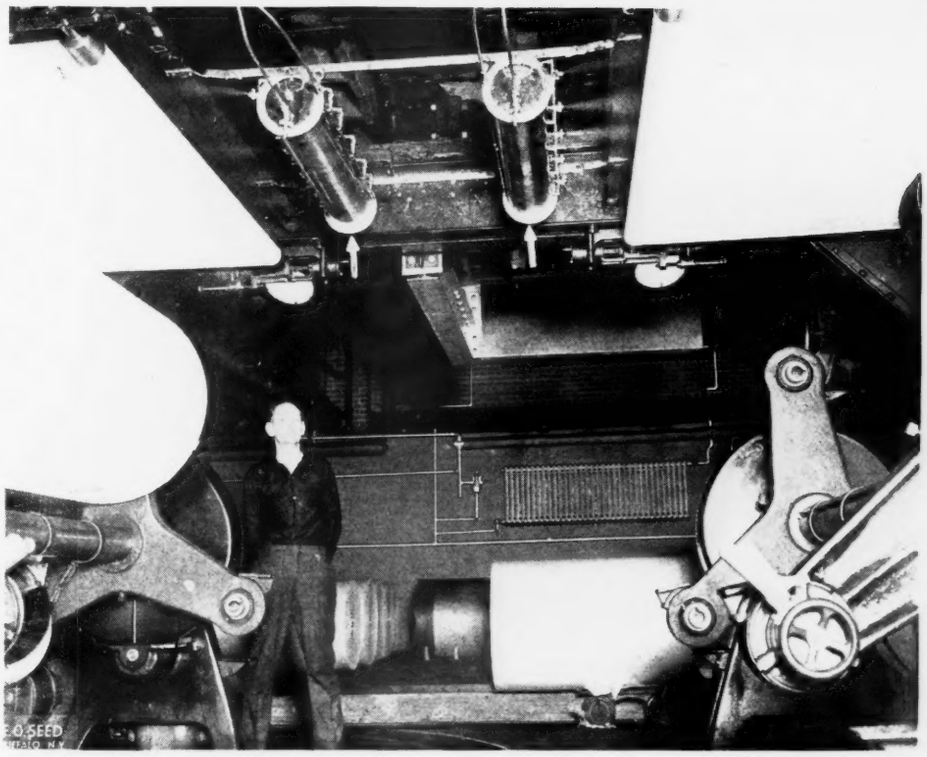


Figure 8

Humidity control apparatus is not expensive and is really necessary at all seasons of the year. Natural midsummer air contains moisture enough, to be sure, but except for this short period the addition of moisture is required. There is just one point in the operations in a pressroom where a properly humidified atmosphere fails to accomplish all that is to be desired. If the paper stock is brought into the room in sealed packages or paper rolls in a too-dry conditions as is the usual case, the moisture in the room does not permeate all through the package or roll unless it remains in the room a considerable time before being used. Moisture can travel through a tightly-wound roll of paper only at a very slow rate of speed. Too much stock would have to be accumulated to remain in conditioned storage a sufficient length of time ordinarily. Where web presses are fed from a roll it is essential to employ a web-conditioning device consisting of a cold water spray atomized very finely with compressed air. Such a device is shown in Figure 8. If the room is properly humidified the paper retains this moisture. If not sufficiently humidified the paper quickly loses the moisture thus imparted to it and trouble immediately follows further along the line of process.

Many devices are on the market other than shown here. The purpose has been to describe the principles involved and to show the simplest and least expensive apparatus design to give good results. The same principles are involved no matter how complicated or expensive the equipment may be. It is hoped this discussion may be adequate to assist in the selection and operation of such devices as to meet individual needs.

Encyclopedia Type Weighed 250 Tons

Among the sets of books comprising an exhibition of bookbindings at the Lakeside Press Galleries is the Encyclopedia Brittanica, which was printed in Chicago by the Lakeside Press.

Some facts about this encyclopedia, not generally known, are that the text exclusive of the index, contains 33,000,000 words, the type weighed 250 tons, the value of the metal used in making the type was $50,000, over 20,000 pages had been set before a single page was plated, it required more than 102 carloads of paper to print the 23,000,000 press impressions, and the skins of more than 20,000 goats were needed for the leather bindings.

The Imperial Type Metal Company furnished 230,000 pounds of linotype metal for this encyclopedia job.

Ludlow's Mayfair Cursive

Mayfair Cursive, the 48-point size of which is shown herewith, is a new script typeface announced by the Ludlow Typograph Company. This original design is being produced in matrix form in 36, 48, 60 and 72-point sizes. It will be

The Mayfair

found particularly valuable for advertising display, having enough color to serve for headings in newspaper and magazine advertising as well as in commercial printing. This attractive script is the first typeface of this character to be offered for composition without restriction for electrotyping, stereotyping, or printing direct.

A Sectional Composition Roller

A SECTIONAL composition newspaper printing press ink roller has been designed and patented by Luther C. Okerberg, mechanical superintendent of the Elk City (Okla.) *Daily News*. The roller was originally developed for use on a flat bed Duplex press, but may be used on other types of presses.

The complete ink roller consists of a number of sectional sleeves applied to the shaft, according to the number of pages being printed on the press. The sleeves which are hollow metallic tubes, coated with regular roller composition, are slipped on the roller shaft. A collar at either end of the shaft is employed to hold the sleeves in position against endwise movement. The abutting ends of each sleeve are beveled to prevent one section from rotating relative to the adjacent section and each of the collars has a straight and a beveled end. Any section may be reversed on the roller shaft.

The mounting of the sections upon each roller shaft permits the roller working surface in its entirety to be varied according to the number of pages to an edition of a newspaper.

During the various seasons of the year composition rollers must be returned to the roller-maker for the purpose of changing the composition to suit climatic conditions. The method of mounting the sections on the shaft permits each section, when removed, to be handled easily and packed for shipment. Consequently, Mr. Okerberg claims a considerable saving in shipping charges where rollers must be shipped to another city for recasting.

Since the sections may be removed from the roller stock one at a time, this operation may be carried out by a single person. Removal and replacement of the conventional type of roller requires the services of two persons, as a rule.

The claim is also made that the sectional roller permits two-color work to be easily carried on, as the distance between the sections is of sufficient width to prevent the colors mixing or running together. Fountain dividers now employed for the purpose would not be required with the sectional roller.

With the conventional type rollers now used a set of four rollers is needed for each four, six and eight pages printed. Under Mr. Okerberg's plan only four eight-page rollers are needed for all three sizes of paper. If six pages are desired to be printed the pressroom merely has to slip off four sections, one on each roller. If four pages are wanted he slips one more section off each of the roller shafts.

Novel Variation of Saw Drive

H. J. Ebbrecht of the *Times* composing room, Tampa, Fla., submits plans for a variation in the standard drive used on the Mohr Lino-Saw. The usual application of the saw drive,

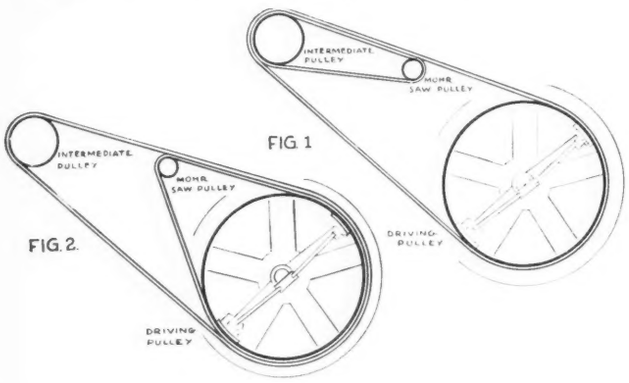


FIG. 1

FIG. 2.

by reason of the thickness of the saw pulley driving belt, increases the diameter of the intermediate pulley which in turn slightly reduces the normal r. p. m. of the keyboard rubber roll shafts, assembler matrix belt pulley and distributor.

By changing the belt arrangement as shown in the drawing, the increase in driving pulley diameter (owing to thickness of the saw shaft pulley driving belt) will slightly increase the speed of the keyboard rolls, the assembler and distributor mechanisms. Likewise, the r. p. m. of the saw blade itself will be stepped up slightly, which seems to bring about no disadvantage in the cutting qualities of the saws in the composing room where the altered drive has been applied.

The speed recommended for the saw blade is 3400 r. p. m. *or more* for cutting slugs up to 12 points in thickness; and from 3800 to 4000 r. p. m. for slugs of greater thickness. A heavier-than-standard fly wheel is used on heavier slugs.

In a machine running not to exceed 7 lines per minute, the r. p. m. of the intermediate pulley would be increased from 273.4 r.p.m. to 291.06 r.p.m., and the saw pulley from 546.8 r.p.m. to 574.42 r.p.m. The claim is made that with the altered drive arrangement mechanical transpositions are eliminated and the operator experiences no difficulty in getting double letters, *i. e.*, two successive letters like "tt" or "ll." In cases where the machine is operated to exceed seven lines per minute, it might be necessary to cut down the speed of the keyboard rubber rolls so they will revolve not to exceed 310 r. p. m.

TWO *in* ONE

LINOTYPE
FOR DISPLAY AND TEXT

Another Great Forward Step in Linotype Flexibility

1886–First commercial composing machine (Blower type)

1890–First machine with inclined removable magazine (many still in use)

1898–First two-letter machine

1903–First two-magazine "mixer"

1906–First machine with light-weight front-removable magazine

1911–First three-magazine machine with unit construction

1911–First four-magazine "mixer"

1914–First machine with auxiliary magazine

1918–First display machine

1924–First "mixer" with standard interchangeable magazines

1932 Linotype combines the range of all machines in the Two-in-One Linotype for *text* and *display*.

On the Two-in-One Linotype both the standard 90-channel text magazine and the standard 72-channel display magazine can be used in any combination desired, and for still greater display range it is available with wide auxiliary magazines accommodating full width 36 point and condensed faces up to 60 point. All magazines are interchangeable with those of other Linotypes.

The Two-in-One Linotype comes equipped with the new Linolite magazines, made of a special alloy which is as durable as brass but very much lighter—22 pounds less on a full-length, 90-channel magazine.

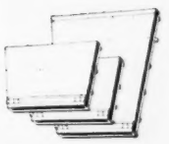
TRADE LINOTYPE MARK

Four Combinations of Main Magazines

For all straight matter three 90-channel magazines

For display and text one 72- and two 90-channel magazines

For more display variety two 72- and one 90-channel magazines



For all display three 72-channel magazines

MERGENTHALER LINOTYPE COMPANY

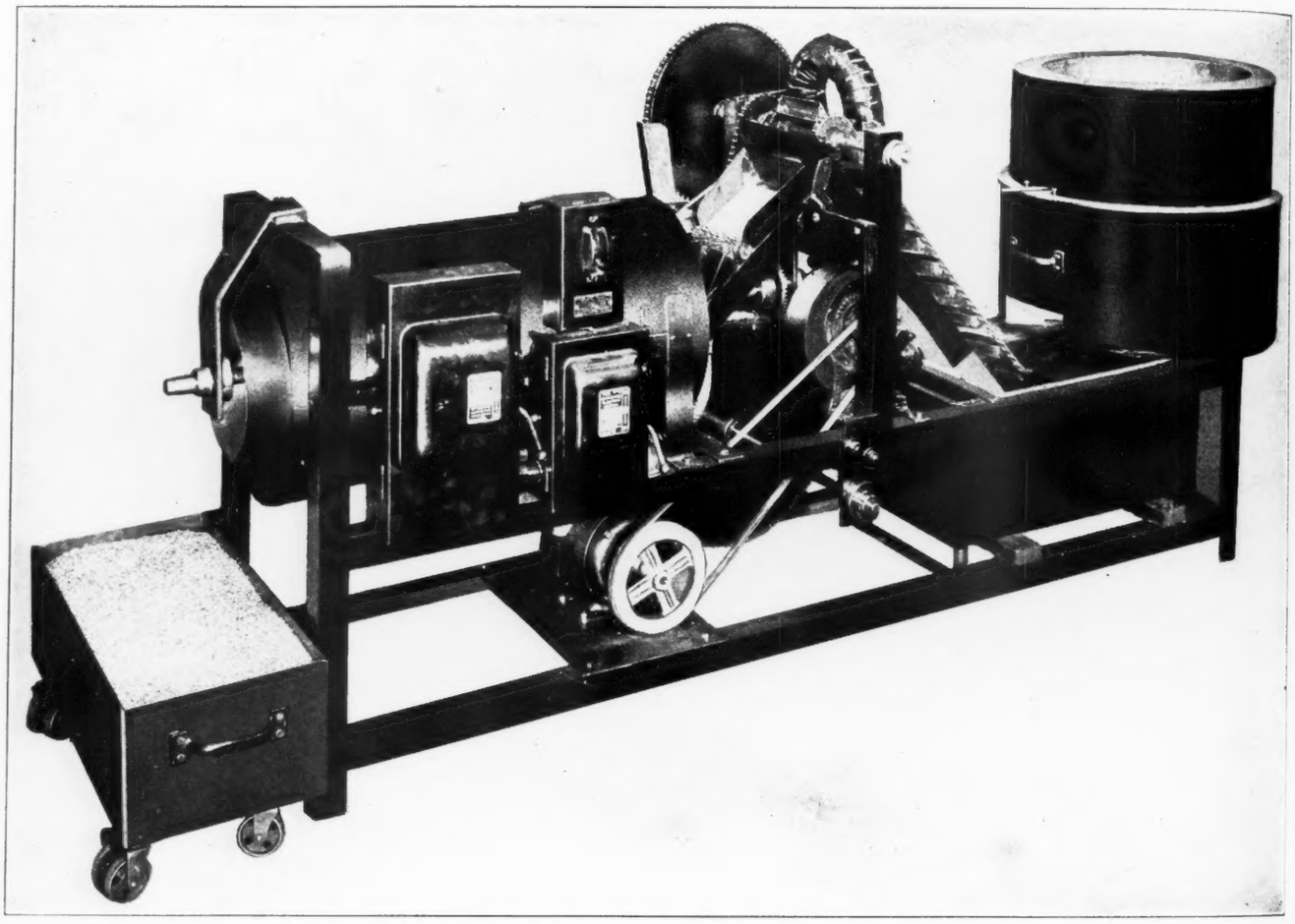
BROOKLYN, NEW YORK · · SAN FRANCISCO · · CHICAGO
NEW ORLEANS · · CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA

Representatives in the Principal Cities of the World

Linotype Scotch and Bodoni Family

Loss By Dross Less Than ½ of 1%—

a low temperature remelting and feeding system, for all line and Metalfeed, producing SHOT as a remelted product and feed-



• The BEARD AUTOMATIC METALMELT as illustrated above is capable of producing 700 pounds of SHOT per hour.

• The Metalmelt produces close grained, washed and electrically dried SHOT, which are fed back into the metal pots of line or material casting machines, by the Beard Metalfeed as illustrated on the opposite page. Eliminating the bulky, laborious ingot system of remelting and its many disadvantages.

• Metalmelt saves labor, saves current in line-casting machines, produces remelted metal with a close grain, improving faces of slugs and solidity of base. Practically eliminates dross losses and has many other economical advantages.

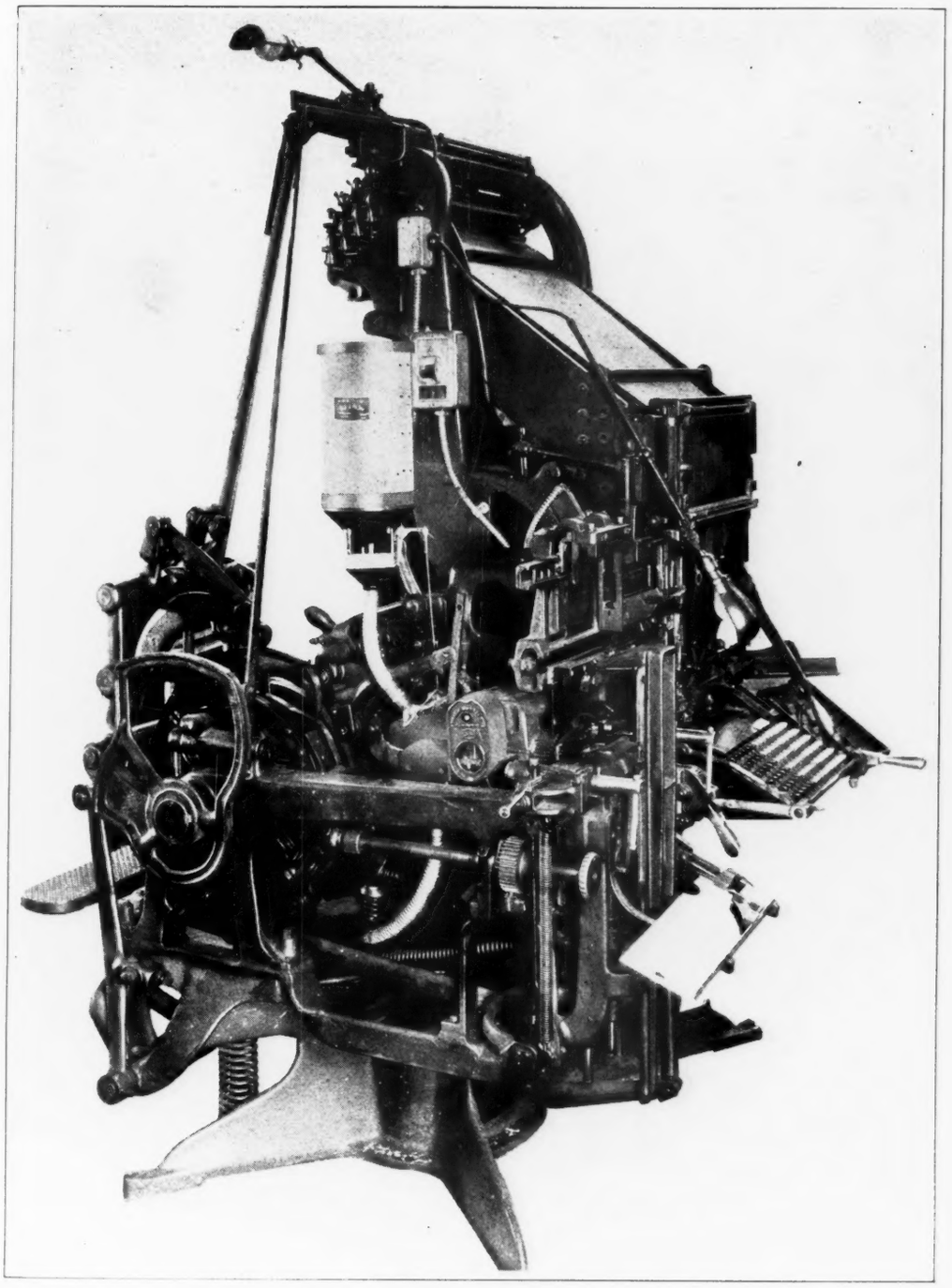
STA-HI NEWSPAPER

417 Oregonian Bldg.
Portland, Ore.

SALES AGENCY FOR BEARD

52 WEST 34th ST.

means that an entirely new automatic principle has been developed, material casting machines. The Beard Automatic Metalmelt and ing SHOT to metal pots on machines, as a metal supply.



The Beard Metalfeed attached to Linotype Machine. Note the neat out-of-the-way attachment holding SHOT sufficient for an ordinary eight-hour shift with one filling.

SUPPLY COMPANY, Inc.

AUTOMATIC METALFEED CO.

NEW YORK CITY

703 Bendix Bldg.
Los Angeles, Calif.

REDUCED PRICES
ON
FUZON
PREPARED
PACKING FELTS
5c
PER SHEET
IN
ALL GAUGES
OR
CUT STRIPS
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SUPERIOR CORK
MOLDING
BLANKETS
•
American Publishers' Supply Company
P. O. Box 131, West Lynn, Mass.

Adhesive Tape for Mounting Cuts

By W. E. Wines*

In view of the discussions at the Mechanical Conferences and elsewhere concerning the various methods of attaching cuts to bases—particularly small advertising cuts—members will no doubt be interested in the following letter from T. P. Beacom, general mechanical counsellor, Hearst Newspapers:

> We have very successfully used tailor's mending tissue as a substitute for glue, which, as you know, is unsatisfactory for anchoring cuts to the base in the composing room.
>
> The process is simple and rapid. We cut the tissue to a size a little smaller than the cut, allowing ¼ to ½ in. margin all around, depending upon the size. This is placed on the base, the heated cut is then placed over the tissue and pressed firmly against the base. That is all there is to it.
>
> We have used this process with complete success with both stereotype metal and wood bases. The cut is held securely in place during moulding. We have also used cuts mounted by this method on flat bed press runs as high as 5000.
>
> Charles Mayer, business manager of the San Francisco *Examiner* recommended this process to us and it has been entirely successful.

The material referred to by Mr. Beacom as "tailors' mending tissue" is known in the trade under various other names, such as splicing tissue, rubber tissue and gutta percha tissue. It is the material commonly used in paper mills for splicing rolls. For that purpose, it is used in strips ¾ in. wide and the splice is completed by pressing it with a hot iron. Any dealer in tailors' supplies can no doubt furnish it.

A tailor supply house in New York City states that it is prepared to supply this tissue in rolls in widths from ½ in. to 2 in. and in sheets 36 in. wide. The price quoted is $1.25 a pound in thicknesses ranging from 5 sq. yds. to the pound to 10 sq. yds. to the pound. This company's name for it is gutta percha tissue.

A New England concern which supplies gutta percha products of various kinds has written as follows:

> We can supply gutta percha tissue in any width from ¼ in. to 36 in. and in any weight from ten sq. yds. to the pound to 3 sq. yds. to the pound. The price varies from 55 cents to $1.25 depending on the formula, quantity, width and weight, the extremely narrow widths and light weights costing the most.

*Manager, Mechanical Department, American Newspaper Publishers Association, New York, New York.

Ortleb Reorganizes

After having been closed for a six-months' period, the assets of the Ortleb Corporation, St. Louis, Mo., have been sold and the company has been reorganized under the name of Geo. Ortleb Co. The factory is situated at 2513 Baldwin St., St. Louis, Mo. George Ortleb, the president, announces that the new company is manufacturing Ortleb Ink Agitators and Printing Equipment.

Hurrah!

On the Street - On time

No more show through
No more strike through
No more offset
No delays from ink troubles
with

COLUMBIAN INKS

THE L. MARTIN COMPANY

45 EAST 42ND ST. NEW YORK, N.Y.

ARTHUR S. THOMPSON, MANAGER.

April Patents

Printed Copies of Patents are furnished by the Patent Office at 10 cents each. These may be obtained by addressing the Commissioner of Patents, Washington, D. C.

1,851,089. ROTARY PRINTING MACHINE WHICH PRINTS FROM A FLAT TYPE FACE. Fritz Fallert, Bern, Switzerland. Filed May 4, 1928. Serial No. 277,747, and in Germany May 20, 1927. 6 Claims. (Cl. 101—269.)

1. Rotary printing machine printing from flat type faces and comprising in combination, a vertically arranged type form, a bed for said type form pivotally arranged on a horizontal shaft and means for swinging the said type form bed out of and into operative positions, comprising a threaded spindle pivotally connected to a stationary part of the machine, a threaded sleeve like nut on said spindle, and a pivotal connection between said nut and the type form bed.

1,851,288. PRINTER'S REGISTERING DEVICE. Elmer F. Noell and Emil E. Thiet, Cincinnati, Ohio, assignors to The Printing Machinery Company, Cincinnati, Ohio, a Corporation of Ohio. Filed July 15, 1929. Serial No. 378,327. 8 Claims. (Cl. 101—387.)

1. A printer's registering device having a body provided with adjustable means for retaining said body in a groove of a foundation support, a plate clamping member, and means for moving said member relative to said body, comprising an adjustment screw movable along inclined tracks in said body, said screw having an enlarged head with beveled bearing surfaces.

1,851,291. PRINTING ROLLER. Adolph Potdevin, Garden City, N. Y., assignor to Potdevin Machine Company, Brooklyn, N. Y., a Corporation of New York. Filed May 8, 1930. Serial No. 450,674. 6 Claims. (Cl. 101—415.1.)

1. In combination a printing roller, attaching blocks set into said roller and adjustable independently of each other lengthwise of the roller, said blocks having a slotted edge, blankets on the periphery of said roller, one end of each of said blankets being attached to the slotted edge of separate blocks, a shaft rotably carried by said roller and lying parallel to said blocks, to which the other end of each of said blankets it attached, and means for rotating said shaft to effect adjustment of the tension in said blankets.

1,851,966. KEYBOARD MECHANISM. Harold A. Burt, St. Albans, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Nov. 29, 1929. Serial No. 410,292. 18 Claims. (Cl. 199—25.)

1. In a keyboard mechanism, the combination of a power-driven roll for operating the cams, a rubber covering tube removably mounted on the roll, means for preventing endwise movement of the roll tube upon the roll in one direction, and a quick detachable cap also mounted on the roll for preventing endwise movement of the rubber tube in the opposite direction.

1,851,972. PRINTING PRESS SHEET DELIVERY FRAME. Harry Coe Blauvelt, New York, and John Edward Scheiberg, Rosedale, N. Y. Filed June 27, 1929. Serial No. 373,960. 4 Claims. (Cl. 271—89.)

1. A printed sheet receiving frame comprising four upright walls forming a rectangle, each wall being composed of sections adjustable in length and arranged to present clearly open spaces at each of their corner intersections.

1,851,979. TYPE CASE. James Percy Freeman, Stone Mountain, Ga. Filed Mar. 12, 1930. Serial No. 435,310. 4 Claims. (Cl. 276—45.)

1. A type case comprising a base, an upright casing on the base of greater height for a portion of its length than for the remaining portion of its length, division walls in the casing forming a short series of compartments and a tall series of compartments corresponding to the height of the walls of the casing for holding type in vertical stacks of different heights, there being a row of alined slots formed at the bottom of one wall of the casing between said division walls, there being a row of alined slots formed at the bottom of the opposite wall of said casing registering with the first named slots, flat push plates slidable on said base through said registering slots in both walls of the casing for ejecting the lower-most type from the stacks, a cover plate removably secured to the base and extending over the ends of said push plates outside of the case, and grips on the outer ends of the push plates outside of the cover plate.

1,851,324. PRINTING MECHANISM. Adolh Potdevin, Garden City, N. Y., assignor to Potdevin Machine Company, Brooklyn, N. Y., a Corporation of New York. Filed July 18, 1930. Serial No. 468,872. 7 Claims. (Cl. 101—351.)

1. In a printing machine the combination of two pairs of form rollers adjacent the upper and lower faces of a type cylinder, horizontally disposed rack and pinion operated mechanism for effecting the independent adjustment of the rollers of the upper pair, and vertically disposed rack and pinion operated mechanism for effecting the independent adjustment of the rollers of the lower pair of rollers.

2. In a printing machine the combination of a roller, a shaft for the roller, bearing blocks, an open bearing for said roller shaft in each block and means carried by each bearing block and having movement relatively to said shaft into and out of operative position with respect to said roller shaft and its bearing, said means when in operative position maintaining the roller shaft in its bearing, and when out of operative position permitting of the instantaneous removal of the roller shaft.

1,851,964. TYPE OR MATRIX FOR TYPOGRAPHICAL COMPOSING MACHINES. Alfred Archer, Caldwell, N. J., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Dec. 21, 1929. Serial No. 415,664. 12 Claims. (Cl. 199—63.)

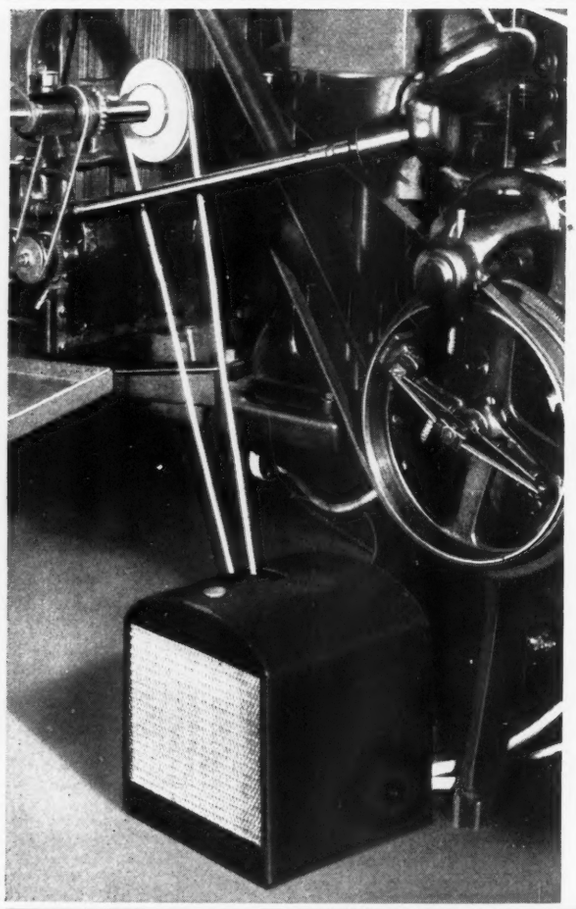
1. A type or matrix formed at its lower end with a pair of projecting ears located respectively at relatively different levels on the front and rear edges thereof.

1,852,211. PRINTING PRESS. John Moscini, Paterson, N. J., assignor to Multi-Color Press Corporation, Paterson, N. J., a corporation of New Jersey. Filed Oct. 29, 1929. Serial No. 403,144. 10 Claims. (Cl. 101—199.)

1. In combination, a frame, a platen therein, a structure arranged to reciprocate up and down and in the frame toward and from the platen and including a drum having its axis substantially horizontal and also having its periphery formed in part by a printing face arranged to coact with the platen and in part as a distributing face, another structure carried by and revoluble around said axis and having means to ink said faces of said periphery, a revolving driver arranged under and having its axis substantially horizontal and crossing the first axis and also having an eccentric engaged with and adapted to reciprocate the first structure, and means to transmit rotation to the second structure from the driver while the first structure is reciprocated by the driver.

1,852,985. MOLD FOR LINE CASTING MACHINES. Samuel E. Sperry, Hollis, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 9, 1930. Serial No. 487,585. 12 Claims. (Cl. 199—55.)

1. A mold for line casting machines comprising opposed members relatively movable



WATER WASTE «
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CONVENIENCE «

Approximately 30 gallons of water is consumed by each **Linotype, Monotype, Elrod and Ludlow**

The MONOAQUA COOLER can be installed in ten minutes, requiring only three quarts of distilled water, which is circulated by a gear pump and cooled by means of a fan-cooled radiator.

The MONOAQUA COOLER, requires only one square foot of space, constructed of the very best material, giving years of service and will pay for itself in a short time by increasing production, saving of water and the expense and delay of having the lime removed from the molds.

The Model A Water Cooler for Linotypes is driven by a split pulley as illustrated; Monotypes and Ludlows direct from a special motor pulley. Model B Cooler for Elrods is equipped with a 1/6 h. p. electric motor, requiring current equivalent to a 40-watt light bulb.

For further information, send for circular. Prices for Water Cooler complete, ready for installation—

Model A—for Linotypes, Monotypes and Ludlows, $50.00
Model B—(motor driven) for Elrod $70.00

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AFTER years of research, metallurgists have recently made an amazing discovery which brings us a remarkable new alloy for manufacturing type. All of our type made of this new metal is called Faberkrome Type.

Faberkrome Type has the following physical advantages: A hardness approaching that of Chromium. A solidity unlike that of any other type on the market. And a perfect clean-cut face.

This type will outwear ordinary type many times over. It stands greater pressure and gives a tremendous increase in number of impressions. It's ideal for long runs. In daily use for over two years, it shows no wear.

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Owing to low prices, now is an excellent time to replace worn type faces with Faberkrome Type. We are ready to fill orders in all the popular type faces in Faberkrome Type at the following prices:

6 point to 12 point . . 75c per pound

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Type cast from ordinary foundry metal—
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TRADE PRESS TYPOGRAPHERS

George A. Faber, *Manager*

407 EAST MICHIGAN STREET - - MILWAUKEE, WISCONSIN

toward and from one another, liners between said members and means for relatively moving said liners away from each of said members.

1,853,019. PRINTING TYPE. Charles R. Murray, Chicago, Ill., assignor to Barnhart Bros. & Spindler, Chicago, Ill., a Corporation of New Jersey. Filed Jan. 16, 1929. Serial No. 332,823. 7 Claims. (Cl. 101—399.)

1. A set of type comprising a plurality of fonts or alphabets, whereof like letters have the same width in the several fonts but have different heights in the different fonts.

1,853,208. PLATE CLAMP. Charles W. Harrold, Cleveland, Ohio, assignor to Harris-Seybold-Potter Company, Cleveland, Ohio, a Corporation of Delaware. Filed July 26, 1930. Serial No. 471,049. 3 Claims. (Cl. 101—415.1.)

1. A plate-clamp for holding a flexible plate on its support comprising oppositely-disposed coacting clamping shafts oppositely rotatable to grip and hold the plate ends interposed therebetween, each shaft being independently rotatable, detachable operative connections between the shafts to rotate same in unison, and separate means to lock each shaft in plate-holding position.

1,853,245. SAW FILING MACHINE. Frank Wellington Wardwell, Jr., Cleveland, Ohio, assignor to The Wardwell Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Jan. 11, 1926. Serial No. 80,386. 14 Claims. (Cl. 76—43.)

1. A saw filing machine, comprising a frame, a vertically movable plate upon said frame, a reciprocable member and file holder carried by said plate, an oscillatory hanger for a saw supported upon said frame, a rotatable shaft having a cam for raising said plate, a rack bar for oscillating said hanger, and means geared to said shaft for reciprocating said rack bar.

1,853,258. PRINTER'S BLANKET. Charles Catran, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a Corporation of Ohio. Filed Sept. 12, 1928. Serial No. 305,487. 2 Claims. (Cl. 154—54.5.)

2. A printer's blanket composed of a fibrous base, a thin layer of soft rubber of uniform thickness vulcanized on the base, and an outer layer of relatively hard rubber, vulcanized to the soft rubber.

1,853,288. MATRIX DELIVERY MECHANISM FOR SLUG CASTING MACHINES. Sylvester J. Sennett, Chicago, Ill., assignor to The Tribune Company, Chicago, Ill., a Corporation of Illinois. Filed July 20, 1929. Serial No. 379,702. 8 Claims. (Cl. 199—27.)

1. In a linotype machine the combination of a matrix magazine, an assembler mechanism, means for releasing the matrices in desired order from said magazine, and gravity delivery mechanism comprising an inclined conveyor adapted to receive the matrices when released and a rotary transfer device for delivering said matrices into the assembler mechanism, the lower end of said conveyor being extended to a point sufficiently near said transfer device to bring the matrices into engagement therewith before they leave the conveyor.

1,853,292. WEB CONTROLLING APPARATUS. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed July 14, 1927. Serial No. 205,719. Renewed Sept. 18, 1931. 7 Claims. (Cl. 242—75.)

1. In a web controlling device for a printing press, the combination with means for supporting a running roll and means for guiding the web therefrom to a printing press of movable braking means for constantly engaging the surface of the running roll, said braking means being normally disconnected from the press and connections from said means to the press for preventing the running roll from rotating any faster at its circumference than the speed of the press.

1,853,478. DRIER FOR PRINTED SHEETS AND THE LIKE. John H. Vincent, Kalamazoo, Mich., assignor to Western Tablet & Stationery Corporation, Dayton, Ohio, a Corporation of Ohio. Filed May 15, 1930. Serial No. 452,593. 10 Claims. (Cl. 198—134.)

10. In an apparatus of the class described, the combination of an upright conveyor comprising conveyor way members disposed in a downwardly diverging relation, a conveyor supporting roller disposed at the top of said way members, supporting rollers disposed at the lower ends of said way members, a conveyor provided with a plurality of carriers spaced so that as they travel over the roller at the upper ends of said way members the sheets are delivered from one carrier to the preceding carrier, said links being in supporting engagement with said way members.

1,853,781. METHOD AND APPARATUS FOR SHEET FEEDING. Ernest G. Rider, Philadelphia, Pa., assignor to Stokes and Smith Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Aug. 15, 1928. Serial No. 299,215. 25 Claims. (Cl. 271—12.)

1. In the art of feeding sheets, the method which comprises applying suction to a portion of a sheet to effect movement of said portion to a region in which other suction acts simultaneously upon remaining portions to change the position of said sheet in its entirety, effecting movement of said sheet, and utilizing said other suction to sustain said sheet during said movement.

1,853,941. DEVICE FOR COUPLING A PRINTING PRESS WITH A SHEET FEEDING DEVICE. Georgi Spiess, Leipzig, Germany. Filed Nov. 22, 1930. Serial No. 497,504, and in Germany May 8, 1928. 13 Claims. (Cl. 101—287.)

1. In combination: a stationary printing press; a separate transportable sheet feeding device which can be connected to said press to cooperate therewith and which is mounted on wheels running freely on the ground; a driving shaft upon said printing press; a driven shaft upon said sheet feeding device; a clutch for coupling said driving shaft to said driven shaft comprising a clutch portion on one shaft and a clutch portion on the other shaft; means for automatically lifting the said sheet feeding device during its movement towards the stationary press; means for guiding the sheet feeding device horizontally relatively to the stationary press, and means for guilding the sheet feeding device vertically relatively to the stationary press during the lifting operation, whereby the sheet feeding device is registered both horizontally and vertically relatively to the stationary press and the clutch members are brought into alignment, substantially as described.

1,854,552. METHOD OF SETTING RULES FOR PRINTING. Morris M. Leftwich, Tulsa, Okla. Filed Apr. 7, 1930. Serial No. 442,253. 14 Claims. (Cl. 101—401.1.)

1. The method of setting rules for a set of parallel lines crossing another set of parallel lines comprising the following steps: taking the rules for printing one of the sets of lines and bunching them together with their printing edges in a single plane; notching all of the aforesaid rules from their printing edges at desired points; taking the other set of rules and bunching them together with their back edges in a single plane; notching all of the last mentioned rules from their back edges at the desired points; said depths of the notches in the two sets of rules totaling approximately the depth of the rules; placing the last mentioned rules in spaced parallel relationship with their printing edges upon a horizontal flat surface; separating the other set of rules in spaced parallel relationship and at right angles to the first mentioned set of rules; the printing edges of the last mentioned rules being faced downwardly whereby interlocking of the rules will occur; sprinkling a granular substance down into the interstices of the grid work of the rules; inserting hardening means above the granular substance; allowing the same to harden; and then lifting the grid of rules from its supporting surface.

1,854,694. PRINTING MACHINE. William K. Eckhard, Dunellen, N. J., assignor to R. Hoe & Co., Inc., New York, N. Y., a Corporation of New York. Filed Oct. 9, 1929. Serial No. 398,510. 5 Claims. (Cl. 101—161.)

1. In a machine for printing from an intaglio plate, a roller for removing excess ink from the plate and depositing it on a salvaging roller, an ink fountain, a member closely adjacent the periphery of the salvaging roller and extending over the fountain, and means acting intermittently to remove ink from the salvaging roller and deposit it on said member.

1,854,695. TYPOGRAPH COMPOSING STICK. William T. Henderson, Washington, D. C. Filed July 24, 1931. Serial No. 552,964. 8 Claims. (Cl. 101—38.)

1. In a device of the class described, a stick including longitudinal elements in spaced parallel relation, one of said elements being cut away lengthwise, to provide in-

Cut Cost . . . Increase Production with A Router and Type-High Planer

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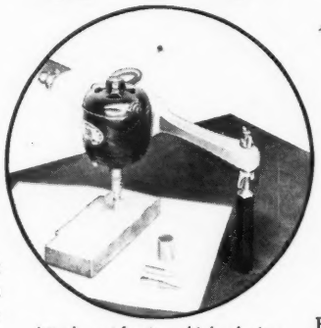
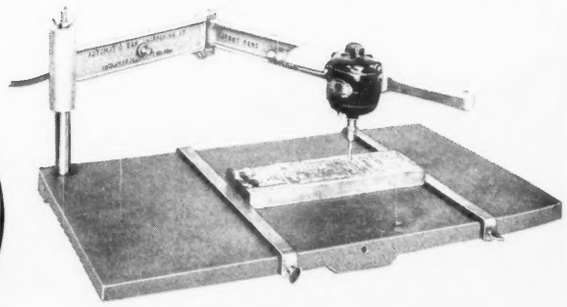


Attachment for type-high planing and routing to fine point



Every Newspaper and Printing Plant should have a router and type-high planer. This practical router is made on the same principle as the large routers, which cost many times more. Stereotype, type-high and shell casts, electrotypes, linotype slugs, zinc, wood and linoleum can be routed quickly and accurately and planed to type-high in a few minutes. This router and type-high planer will pay for itself in a short time in press make-ready, mounting of cuts, routing high point and type on casts and the making of type and cuts for posters.

Send your order today for a router and type-high planer or further information.

SPECIFICATIONS

BED—Size, 25 x 15 inches; cast-iron, machined surface.

MOTOR—110-volt, Universal—either A.C. or D.C. 10,000 R.P.M. Fan cooled, General Electric make. Guaranteed for one year.

ARMS—Solid bronze to prevent breaking. Adjustable elbow with take-up for wear.

LIGHT—Small light bulb on arm, side of motor, to give illumination while routing.

SWITCH—Conveniently located on arm, controlling motor and light.

Thumb-screw over hardened steel post controls depth of router bit.

WEIGHT—Approximately 80 pounds.

Machine complete with cord, motor, light fixture, bulb, router bits, type-high gauge and attachment for type-high planing.

AUTOMATIC SAW SHARPENING COMPANY

SHARPENERS OF PRINTERS' AND STEREOTYPERS' SAWS

312 East Ohio Street Indianapolis, Indiana

The above reproduction of a photo by Ewing Galloway is printed direct from a Silvertype, made from a Silvertone Matrix, by the Silvertone Process Corporation.

creased space for a large matrix, this element including an inwardly extending tongue, and an element effective longitudinally and transversely as a matrix spacing device, guided by the tongue and slidable longitudinally thereof into abutting relation with the large matrix.

1,854,848. PRINTING PRESS. HUBERT LANG, Chicago, Ill., assignor to Goss Printing Press Company, a Corporation of Illinois. Filed May 19, 1927. Serial No. 192,684. 12 Claims. (Cl. 270—9.)

1. A rotary printing press including in combination two horizontally and longitudinally disposed linear series of perfecting printing units, a press frame in which said series are mounted one above the other, web supply mechanism for the various printing units, means for directing the perfected webs downwardly from the printing units of said upper series, means for directing the perfected webs upwardly from the printing units of said lower series, directing and turning means for said webs located between the units of said superposed series and a common folding mechanism to which the webs may be selectively directed.

1,854,867. PRINTING MACHINE AND PRINTING MACHINE ATTACHMENT. GEORGE H. STAHLER, Cleveland, Ohio. Filed Nov. 29, 1927. Serial No. 236,573. 17 Claims. (Cl. 101—144.)

1. In a machine of the class described; a design or plate cylinder, a dampening mechanism, means for causing said mechanism to contact with a plate on said cylinder at certain revolutions of said cylinder, an impression cylinder, and a main printing drum or cylinder disposed between said plate cylinder and impression cylinder, said main printing cylinder adapted to hold either forms for direct printing or an offset surface for lithographic or offset printing.

1,855,031. APPARATUS FOR CASTING CURVED STEREOTYPE PLATES. EMILE GEORGES SAINT-AUBIN, Paris, France, assignor to Linotype and Machinery, Limited, London, England, a Limited Liability Company. Filed Nov. 13, 1931. Serial No. 574,701, and in Great Britain Nov. 12, 1930. 2 Claims. (Cl. 22—5.)

1. In a mould for casting curved stereotype plates, the combination of a cylindrical core, a semi-cylindrical back and a ring adapted to close the lower end of the casting chamber between the core and the back, said ring being formed of two separable superimposible parts secured together, and packing sandwiched between them and adapted to be removed along with the two parts as a single entity.

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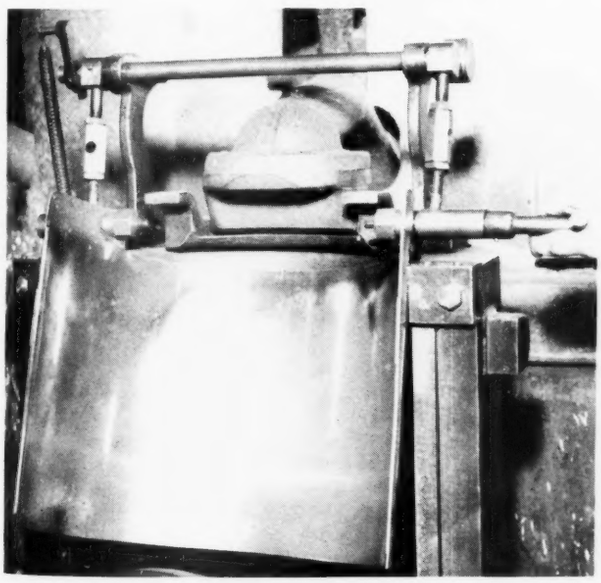
CINCINNATI, OHIO

Improved Support for Pouring Sheet

J. Terrance Mahan, Superintendent of Stereotype Department, Akron (Ohio) "Beacon-Journal," Who Has Patented Adjustable Support for Pouring Sheet.

J. Terrance Mahan, superintendent of the Akron (Ohio) *Beacon-Journal* stereotype department has been granted a patent just recently on an adjustable support with means for varying the position of the pouring sheet or tail pan in the casting box of a Pony Autoplate machine.

The pouring sheet, or "tail pan," as some stereotypers call it, is placed by hand in relation to the bolster of the mat in



the Junior and Autoplate machines as well as hand-casting boxes, and if not positioned correctly is the fault of the operator.

The pouring sheet on the Pony Autoplate as originally applied to the machine has been a "one-shot" distance arrangement. In order to alter the position of the sheet in relation to the bolster due to the variation in shrinkage of the dry mat, the sheet would have to be dressed off or a new sheet of greater length provided to meet the bloster.

In the improvement as developed by Mr. Mahan and shown in the illustration, adjustable eyebolts suitably designed have been substituted for the fixed pouring sheet supporting levers. The improvement, in fact, is very simple. By loosening the upper and lower locking nuts and rotating the eyebolt nut with a pin wrench or the fingers the pouring sheet can be raised or lowered so as to cause its lower edge to meet the matrix bolster exactly.

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Every day our representatives, by practical demonstration, are proving the benefits of Burgess Chrome Mats.

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BURGESS CELLULOSE COMPANY

Division of C. F. Burgess Laboratories, Inc.

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Latest Printing Equipment Mechanisms

Manzel Automatic Lubricator for Presses

Manzel Brothers Company, Buffalo, N. Y., announce a new Force Feed Lubricator for automatically lubricating the bearings of presses and other industrial machinery.

The lubricator is intended to eliminate the human element from oiling and make the lubrication entirely automatic. Bearings in dark, out-of-the-way or hard-to-get-at places are taken care of as effectively as the more accessible ones.

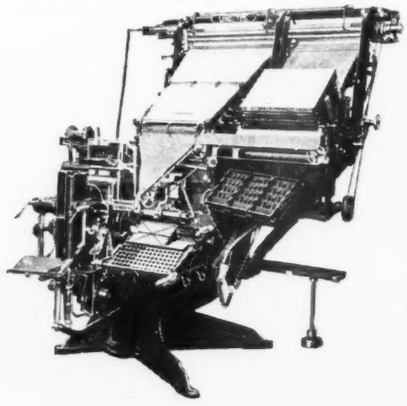
By the use of the Manzel Model "25" lubricator there is an independent feed line to each point to be lubricated and each bearing receives just the right amount of oil. The length of the oil pipes, viscosity of oil, temperature, or pressure on the bearings are said to have no effect on the operation of the Manzel Lubricator. After the reservoir is filled with oil and the feeds have been set to supply the proper amount to each point, no further attention is required except to replenish the oil reservoir when necessary.

The lubricator itself consists of a tank in which are placed a number of individual pumping units. Each of these units is, in itself, a small double plunger pump, independently adjustable to supply the exact amount of oil required by the bearing being supplied with oil by that unit.

These lubricators can be furnished in many different ways, and a suitable size and style can be supplied for practically every type of machine. They can be furnished with from one to thirty feeds, with either rotary or ratchet drive, different sizes of reservoirs, different arrangements of fastening lugs, etc. For high speed machines requiring very small amounts of oil at some bearings, lubricators with special reduced drives can be supplied.

Mergenthaler Announces "Two-in-One" Linotype

The Mergenthaler Linotype Company, 29 Ryerson St., Brooklyn, N. Y., announces the "Two-in-One" Linotype—a machine for large display faces and small body matter from the same keyboard—a machine that offers all advantages of straight-matter speed and economy, plus an increased range of typographic display. Its range is from 5-point up to and including full-width 36 point and 60 point condensed faces.



SATISFIED WITH CERTIFIED

CERTIFIED DRY MATS

Value Is the Certified Story

Price itself does not determine value. Price is only one factor and publishers, in spite of the present economic conditions, are coming to appreciate this fact more and more.

To arrive at value it is necessary to take into consideration both price and QUALITY. On this basis we sincerely believe that Certified Dry Mats offer publishers the utmost for their money — in other words, the greatest value. And publishers and their mechanical staffs have not been slow to appreciate this fact.

While we suggest that you try a case of Certified Mats, and make a thoroughly comparative trial, we will gladly supply you with samples free of charge and without obligating you in any way, if you so prefer.

Certified Dry Mats allow you to choose a mat best suited to your purse and purpose. They mean 100% satisfaction in your stereotype foundry, without question or quibble.

THAT'S CERTIFIED.

CERTIFIED DRY MAT CORPORATION

338 MADISON AVENUE . . . . NEW YORK, N. Y.

For dependable stereotyping --- use Certified Dry Mats

Made in U. S. A.

"This machine," runs the announcement, "carries three 72- or 90-channel main magazines, full-length or split, as desired, in any combination desired, and is available with as many as three wide auxiliary magazines. The 72-channel magazines and the auxiliary magazines are for display, the 90-channel for straight matter.

"Display and text are handled with equal speed. Magazines are standard and interchangeable with present 72-channel display, and 90-channel text, magazines. The operator can change from text to display and back again in seconds. Magazine equipment can be all display, all text, or any combination of either to meet production demands.

"This machine can be equipped entirely for straight matter with three 90-channel magazines; for display and straight matter with one 72- and two 90-channel magazines; for a greater varity of display with straight matter with two 72-channel magazines and one 90-channel, or entirely for display with three 72-channel magazines.

"The 'Two-in-One' Linotype comes equipped with Linolite magazines—22 pounds lighter than the brass magazines. These new magazines, made of a special alloy, and identical with the brass magazines in every respect except weight, are surprisingly light and easy to handle."

Monoaqua Mold-Cooling System

The Dixon Company, 312 East Ohio St., Indianapolis, Ind., is furnishing the Monoaqua Cooler for cooling molds automatically on Linotypes, Monotypes, Ludlows and Elrods.

Approximately 30 gallons of water per hour is consumed by each Linotype, Monotype, Ludlow and Elrod, as well as the expense and inconvenience caused by the liming of molds, plumbing bills and placement of machines where water is available.

The Monoaqua Cooler can be installed in 10 minutes and requires only three quarts of distilled water which is circulated through the mold-cooling system by a gear pump. The water is cooled by means of a fan-cooled radiator. The cooler requires only one square foot of space and the manufacturers claim it is constructed of the very best materials, giving years of service, and will pay for itself in a short time by increasing production, saving water and the expense and delay of having lime removed from the molds.

The Model A water-cooler for Linotypes is driven by a split pulley on the intermediate shaft. Monotypes and Ludlow coolers are driven direct from a special motor pulley. The Model B cooler for Elrods is equipped with a 1/6 h. p. electric motor and requires current equivalent to that consumed by a 40-watt light bulb.

Further particulars may be obtained by sending for a circular to the Dixon Company.

Portable Pyrometer

Every user of Linotypes, Intertypes, Monotypes or other typesetting machines knows how necessary it is to keep the metal at the right temperature. A frequent check will guard against clogged mouthpieces and nozzles and the consequent poor results due to metal being too cold or too hot.

The Illinois Testing Laboratories, Inc., 139 W. Austin Avenue, Chicago, announces a handy portable instrument for this purpose, known as the Pyro Prod. With the Pyro Prod a temperature reading can be obtained in less than ten seconds. It operates on the well-known thermo-electro principle. It has no glass tubes or bulbs to break, no liquids to spill. It is sturdily built to give long, accurate service.

Paper Stiffness Tester

It is claimed that new standards of speed and accuracy in testing the stiffness of bond, ledger and folder stock are achieved by the Toledo Paper Stiffness Tester, originally de-

It's NEW

Libite
TRADE MARK
Instantaneous

Type Cleaner & Ink Remover

LIBITE is not to be compared with ordinary type wash solutions—it **actually differs** and a revelation awaits you in a trial of this extraordinary efficient cleaner—a result of careful analysis and the outcome of a product unmatched in efficiency.

LIBITE is unequaled for rapidly and efficiently removing ink and other accumulations from type forms, plate base, electros, halftones, fountains and for all general washup purposes.

LIBITE works so rapidly that it is a real time-saver in the press room or composing room. Even halftones and electrotypes that have been standing for a long time can be thoroughly cleaned with LIBITE without effort.

LIBITE does not contain ether, chloroform, alkali or acid. Ready for use. Will not injure hands or stain paper.

THE COST — Not as a Comparison — You'll use less and do the job quicker.

1 Gallon can..... 2.50
5 Gallon can, per gallon..... 2.00
10 Gallons, per gallon..... 1.75
30 Gallon drum, per gallon.....1.50

MAIL COUPON BELOW

PERFECTION TYPE, Inc.,
700 Manhattan Bldg., St. Paul, Minn.
WE ARE INTERESTED in a better Type Cleaner and Ink Remover. Enclosed our remittance of $1.00 for trial order prepaid (returnable without obligation).

Name _____

Address _____

Interested Dealers Write

Interrupted Production Means Increased Costs

RE-MOLDS and recasts create increase in your costs, which are far-reaching.

Loss of time, loss of materials, loss of morale and finally, late arrival "on the street," are some of these costs.

With WOOD DRY MATS you have protection against these increased costs, because of the tremendous amount of experiment, test and research which have entered into our finished product.

Our service men get first-hand knowledge of individual plant requirements, and WOOD DRY MATS are made to meet your needs.

There is no obligation if you call upon us to help find the solution.

WOOD

FLONG CORPORATION

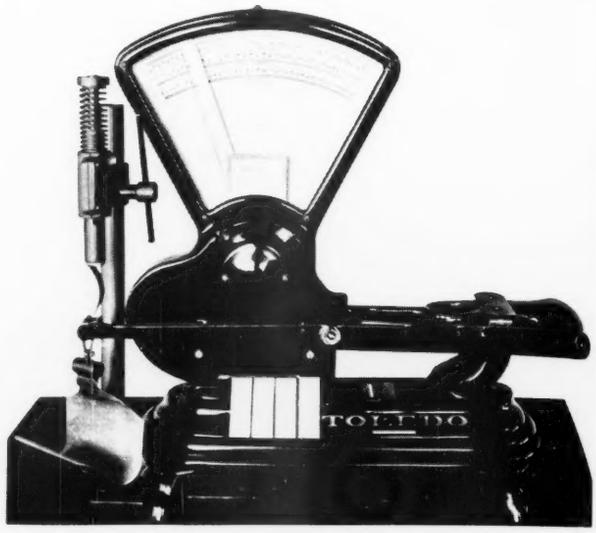
HOOSICK FALLS, N.Y.

WOOD DRY MATS

ALWAYS UNIFORM

veloped by Remington-Rand, Inc., and now manufactured by Toledo Precision Devices, Inc. This attachment is mounted on a Toledo Paper Ream Auto-Gage and combines in one device both the weighing operation and the stiffness test.

This attachment for testing stiffness consists of a special bracket supporting an adjustable loading member which



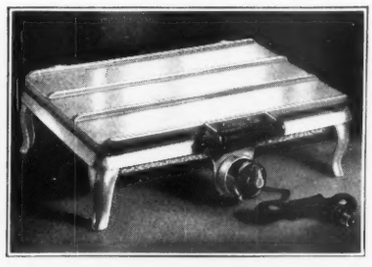
contacts one end of a sample to be tested. The other end of the test strip rests on an aluminum plate on the scale arm. Mounted on the Toledo Paper Ream Auto-Gage; it does not, in any way interfere with the use of that device for determining ream weight.

It is simple to test paper stiffness with this device. Ten strips, one inch by three, are taken as samples of the lot to be tested. Ten strips should be cut each way of the grain in the paper. In testing, five strips should be tried with the felt side out; the remaining five with the wire side out. The results of ten tests will give a reliable average stiffness in the lot in question.

In testing, each strip is inserted in the gap between the aluminum plate and the end of the plunger. The handle is then turned slowly and steadily to bend the paper. This pressure is accurately indicated on the chart. The maximum point registered represents the stiffness. In this way, stiffness is tested accurately and with large time savings, since it can be done at the time of the ream weight test.

Full details can be secured on application to Toledo Precision Devices, Inc., Toledo, Ohio.

Model "A" Reliable Dry Mat Scorcher



The Printers' Mat Paper Supply Company, 559 West Lake Street, Chicago, Ill., claim that the Model "A" Dry Mat Scorcher will dry a mat 13 in. by 19¾ in. or smaller, in less than a minute.

The Scorcher is fitted with a hinged cover which is properly ventilated to facilitate drying of the mat. Four heavy strip heaters furnish the heat. The amount of heat is controlled by a three-heat switch.

The common practice is to put a mat on the metal pot to dry. This very often causes warps and buckles the mat so that it is difficult to get a good cast. By using the Reliable Dry Mat Scorcher it will not be necessary to make a number of casts before a good one is obtained.

Your Questions Answered

VARIED RESULTS WITH SILVER INK

P. O. H. writes: "Thought I would send a couple of samples run at different times on a Vertical. One specimen was run with opaque white tinted a little with one run of silver. The other job was run with German base and two runs of silver. Sometimes I have good luck and at other times I have 'rotten' luck with silver ink. The silver dried hard on both runs before running black."

ANSWER: We want to say, first, that because you are able to do a better job with metallic inks at one time than you are at another you need not be discouraged. I think we all have this same experience. We work under different conditions from time to time, as atmospheric conditions are changeable and when we use the regular composition rollers we also have different conditions from day to day. Composition rollers are far from being constant but, on the other hand, they are susceptible to atmospheric conditions; hence are not in the same condition day after day even though they may still be good enough to be used. Change of temperatures, certain kinds of papers, etc., also have an effect upon this matter.

Metallic ink mixed identically the same two different times may work differently even though there is only a short space between the working of the two jobs. In fact, in most commercial shops it is a battle to turn out consistently good work with metallic inks even though there have been improvements in their manufacture recently. The main thing is to keep your standard as high as you can and take all precautions you can to see that the inks give maximum results. If you run on metallic inks day after day they are still likely to give trouble but you will be in a better position to obtain a greater degree of uniformity. The jobs which you submitted look good.

The sample printed with opaque white and one run of silver shows the result of only one layer of silver. You could overcome this to a certain extent, no doubt, on a larger press and at times you would get a little better result than this sample shows but in the main both samples should be satisfactory.

You have a colored background ranging from buff to a tint somewhat reddish brown and this, together with the silver and black, constitutes the color scheme of the job. It is noticeable that the silver under which you have printed the opaque white forms a greater contrast with both the background and the black. In our opinion this would be more effective than the silver printed over a base if you could get a little better coverage of the silver. The reason for this is that greater degree of contrast really helps the job. The silver on the sample showing a base with two runs of silver is printed smoother and is really better as far as the sheen is concerned. Of course, it has more brilliancy in this respect due to the fact that two layers are covering well, whereas on the other sample the one is not. Yet the greater contrast formed by the other design makes up for this to a great extent.

Ludlow Installations

Among newspapers which have recently adopted the Ludlow system of hand-set, slug-cast composition and installed equipments are the Wisconsin Rapids *Tribune* of Wisconsin Rapids, Wis.; the Ingelwood Daily *News* of Inglewood, Cal., and the *Jewish Advocate* of Boston, Mass.

Among the Ludlow users who recently traded in their old machines for up-to-date equipment are the Buffalo Evening *News* of Buffalo, N. Y.; the Daily *News* of Ashland, Pa.; the Bethlehem *Globe-Times* of Bethlehem, Pa.

HEY JOHN

"Send this Metal Sample to Imperial!"

"I DON'T KNOW what I would do if I could not have my metal analyzed periodically. Ever since I have been using Imperial I have been sending samples for analysis, and as a result my metal has been in perfect balance since I started using Imperial. This means I have a minimum of dross, less fuel consumption, and freedom from machine and metal troubles. This regular metal analysis is one of the features that I like best about Imperial. That is the reason why I

stick to

Imperial METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

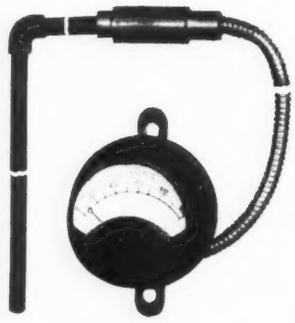
Why Burn Your Metal?

Why waste fuel?

Why spoil plates?

Why risk expensive delays?

Use an "Alnor" Pyrometer



Metal temperature is vitally important to every newspaper and printing plant.

$42 COMPLETE

Why guess when you can equip each stereotype, electrotype or remelting furnace with an "Alnor" Pyrometer for as low as $42.00?

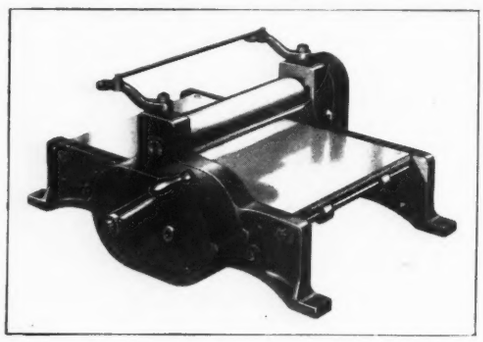
The "Alnor" Pyrometer is accurate, rugged and durable. It can be installed by any shop man in a few minutes.

It pays for itself many times over in the saving of metal, time and fuel to say nothing of improving your printing through better plates.

Write for descriptive bulletin and list of users.

Illinois Testing Laboratories, Inc.
139 W. Austin Avenue Chicago, Illinois

STEREOTYPE MATS



MADE in your own plant on the RELIABLE DRY MAT MOLDING PRESS will enable you to save time . . money . . space

As Easy as Proofing

MATS ARE EASILY FILED

CONDITIONED MATS • MAT STORAGE BOXES

PRINTERS MAT PAPER SUPPLY CO.
559 West Lake Street « » CHICAGO, ILL.

Send for Circulars

The Composition of Inks

(Continued from page 13)

known to mankind. It was formerly found in the natural state but today all Ultramarine used by printing ink manufacturer is made synthetically. This blue is exceptionally permanent and brilliant but it more than atones for these two excellent features by its weakness and poor working qualities on the press.

There has been developed in recent years a blue as brilliant as Ultramarine with much greater strength and far superior working qualities. This is known as Oriental Blue. Peacock Blue is a brilliant greenish blue used extensively in process work but as we all know from experience it is very fugitive and only recently has there been developed a blue approaching the peacock in hue but at the same time permanent.

GREENS

The greens used today are mostly Chrome Greens. They are a precipitated mixture of Chrome Yellow and Milori Blue and the shades are varied from light to deep by varying the proportion of blue in the mixture. These greens are very permanent and have good covering but they are not alkali proof and they are dull compared against the green lakes. Green Lakes are made as all the lakes are, and, as before mentioned, it is only recently that we have been able to make green lakes permanent.

BROWNS

There are practically no browns used in printing ink today which are made from a straight dry color. Most of them are mixtures of reds, yellows, or oranges with black. There are a few natural browns, such as the Umbers and Siennas which are complex oxides of iron. These are exceptionally permanent but can not be used to advantage in ordinary inks because they are extremely abrasive in character and would soon wear down and make our plates useless.

TINTS

Tints such as grays, buffs, blue tints and green tints are all made by the proper mixture of some of the foregoing colors with whites. They are made either transparent or opaque as the occasion demands by using either a transparent or opaque white.

This covers completely the important pigments used in printing ink manufacture. There are others of lesser importance which every manufacturer must resort to when inks of special qualifications are to be made. There are still some colors whch we are looking for and it is doubtless true that in a few years the printing ink manufacturer will add many colors not here mentioned to his already great stock of pigments.

VARNISHES

The next essential ingredient in printing ink is varnish. You are all acquainted with linseed or litho varnishes. These are made by heating refined linseed oil to approximately 600 deg. F. and holding this temperature until the desired body is attained. In making a very thin varnish such as No. 0000 we hold this temperature for only a short time, but when we make a No. 5 or No. 8 varnish it is necessary to hold that same temperature for many hours. Rosin Varnish is next in importance and is made by distilling rosin. They are used extensively in black inks. They may be distinguished from litho varnishes by their peculiar and pungent odor.

Mineral Oils of various viscosities are used by printing ink manufacturers, especially in the cheaper grade of inks where drying is of little or no importance. There are other oils used to a lesser extent such as Perilla Oil, Soya Bean Oil and China Wood Oil.

DRIERS

The third essential ingredient is driers. Driers are compounds of lead, manganese or cobalt which have the property

of accelerating the drying of a varnish. Without the addition of drier it would take a linseed varnish weeks to dry. By the addition of a small quantity of these metallic compounds this drying is shortened from a matter of weeks to sometimes as low as five minutes. The drying of an oil is a wonderful chemical reaction when one considers that the reaction involved is the same force which destructively transforms our structural iron and steel to rust, yet becomes constructive and transforms our ink which must be wet in the fountain to a dry product on the finished sheet.

This force is oxygen and the action of these metallic compounds is their peculiar property of taking up of the oxygen from the air and passing it over to the varnish which combines with it, forming a hard, dry compound.

The individual merits of the drying metals, lead, manganese and cobalt, are too involved for description here but it is a fact that often a combination of two or more of these drying elements is better than any one element alone. As a general rule, we find that cobalt is the best drier for blacks and whites and dark colors, while lead and manganese are superior for reds, yellows and other light colors.

WHY INKS DO NOT DRY AT TIMES

We might mention here why the same inks sometimes dry and then other times do not dry. This variation probably gives a printer more worry than any other feature in printing and unfortunately it will be one of the hardest things for him to overcome. The reason for this is that if he is to have the same drying with the same ink at all times, it will be necessary for him to have the same atmospheric conditions and temperatures in his press rooms. This will necessitate the installation of humidifiers and temperature control apparatus throughout his plant. The reason that temperature makes a great difference in drying time is due to the fact that the drying of printing is is a chemical reaction and there is a theory in chemistry that the speed of chemical reactions is approximately double for every 20 deg. F. rise in temperature, so that you can easily see why on a warm, dry day an ink will dry, while on a cold, damp day it is next to impossible to get that same ink dry without increasing the amount of drier. This is a condition that printing ink manufacturers cannot control and it is therefore necessary for the printer to use his own good judgment in the manipulation of his ink. If possible it is always better to use the ink as you receive it, but we realize that many times conditions arise such as change in weather conditions, change in stock, and change in the nature of the form which necessitates the intelligent manipulation of the ink by the printer.

MONOTYPE PARTS REBUILT
and New Monotype Accessories

Prompt Service — Less Expensive — All Work Guaranteed

Send your name on a post card and we will put you on our mailing list to receive our monthly bulletin on "Free Monotype Equipment Exchange Service"

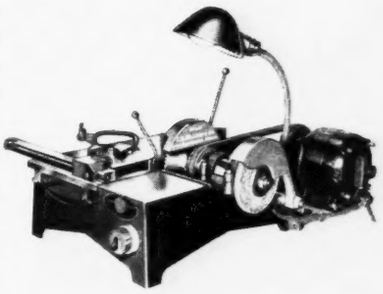
NEWTON MACHINE CO.
211 High Avenue Cleveland, Ohio

Linotype and Intertype Repair Service

Molds—side knives—back knives—1st elev. back jaws—spacebands—dist. box bars—2nd elev. bars—magazines—motors—dist. screws made like new—driving shafts bushed—general repairing of parts. Also make special Linotype and Intertype tools—Matrix ear file gauge $2.50—magazine expander $4.50—magazine broach $4.50—liner cutting gauge $25.00—fiber motor pinions for all makes of motors and special pinions made to order.

William Reid & Co. 537 S. La Salle St. Chicago - Illinois

Here's How
COST CUTTER SAWS
SAVE YOU MONEY



Cost Cutter Saws speed up your production and increase accuracy. Leading newspaper and commercial printing plants are saving money with this saw because it cuts to points or fractions of points, leads, slugs, rule, type, borders, ornaments, stereotypes, electrotypes and other printing office materials of lead, brass, copper, zinc and wood. Illustration shows Model "A," an all-purpose saw trimmer for smaller plants, ad-alleys, or as an auxiliary. It saws, trims at a single operation, miters, outside mortises, and grinds. Model "B," larger model, is even more efficient. Send today for complete information on Cost Cutter Saws and find out how easy it is to own one and how they save money in your plant.

C. B. NELSON & CO.
727 South Dearborn Street Chicago, Ill.

THE CHEAPEST SPACEBAND IS ONE THAT WILL GIVE YOU THE LOWEST MAINTENANCE COST!

"Star" Spacebands will do this.

First, because they have the patented eccentric steel pin that makes changing a sleeve, the work of a moment.

Secondly, good wedges can be fitted with sleeves, right in your own plant . . . because star sleeves and wedges are 90% interchangeable . . . *so accurately are these bands made.* (Sleeves in all thicknesses are only 45 cents each).

You take no chance in buying these bands. Years of service has demonstrated their consistent accuracy. Close inspection will reveal their fine workmanship.

STANDARDIZE ON STARS FOR THE SAKE OF ECONOMY!

PRICES

Medium Thick.	$1.00
Lots of 100,	.90
Extra Thick.	1.15
Lots of 100,	1.05
Thin.	1.10
Lots of 100,	1.00
Extra Thin.	1.10
Lots of 100,	1.00
Special Type.	1.25
Lots of 50,	1.15
" " 100,	1.05

On Replacement in Lieu of Repairing,

Medium Thick.	$0.85
Thin.	.90
Extra Thick.	.95
Special.	.95

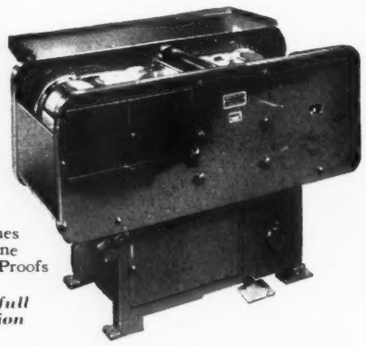
Linotype Parts Corporation
New York, 270 La Fayette Street
Kansas City, 314 West 10th Street

ELECTRIC Proof Press

Saves its initial cost every 11½ weeks

as compared with any other equipment of equal capacity

This is what A. C. Nielsen & Co., nationally known engineers, found out in a survey in collaboration with one of Chicago's leading newspapers. This 5-page survey will be mailed on request. Ask for it today. It's interesting.



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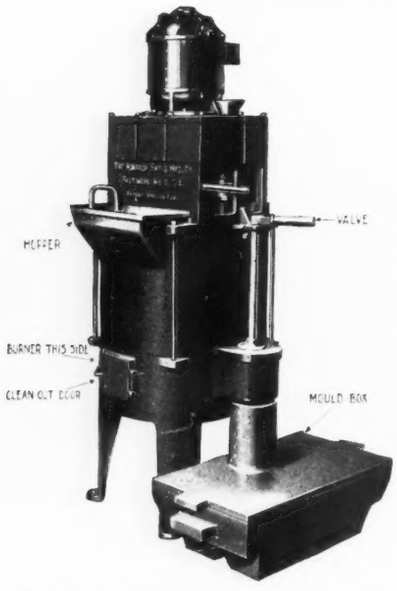
Printing Surface
15 x 28 inches
Makes Fine Advertisers' Proofs

Write for full Information

VANDERCOOK
The original modern PROOF PRESS
940 N. Kilpatrick Avenue
VANDERCOOK & SONS, INC., Chicago, Ill.

THE MONARCH METAL RENOVATOR

is used in stereotyping departments for the direct reclaiming of new metal from dross.



It occupies but two and one-half feet of space and is placed preferably near the larger stereotype pots from which the dross is skimmed. The dross can be immediately thrown into the Renovator, thus eliminating storage of same in cans and the packing for shipment to the smelter.

The Monarch Metal Renovator will reclaim from 65 to 75% new metal from your dross, thereby effecting a substantial saving and maintaining the quality of your metal.

Write for Catalog P.E.E.

The Monarch Engineering & Mfg. Co.
701-702 American Bldg. Baltimore, Md., U. S. A.
WORKS, CURTIS BAY, MD.

New Catalogs, Books and Bulletins

Readers of PRINTING EQUIPMENT ENGINEER who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost except where noted.

Good Times or Bad Times—Two-color, 4-page illustrated circular describing various parts made by Rich & McLean, Inc., for application to Linotype machines.

Rhoads Tannate Special—Folder printed in colors, announcing a new Rhoads leather belt. Also gives advice on the use and care of leather belt and describes a convenient holder for rounded belt.

A New Era in Air Pumps—Profusely illustrated booklet, 6⅛ by 9¼ in., describing different applications of Leiman Bros., Inc., air pumps to industrial tools, many of which are for printing machinery.

Perfect Tension, Web Control and 293, 240 Sections Without a Sheet Break!—Series of three folders describing Kohler Bros.' mechanisms for printing presses.

The New ipi Offset Blanket Is Ready for You!—Booklet describing merits of a new offset blanket made by The International Printing Ink Corporation.

Four Features That Eliminate All Register Worries—Illustrated broadside, printed in blue and black ink, describing the Warnock Register Hook Systems, the Perfection Base and Hook and the Honeycomb Base and Hook.

Rockaway Automatic Spaceband Cleaner—Folder describing spaceband polishing machine. Also tells how it operates from a technical standpoint.

Col-R-Set—Folder describing merits of a compound which stops offset, mottling, picking, piling, sticking, crystalizing or drying on press.

"Sure Grip" Work-Holding Safety Clamp—Circular describing clamp for application to Miller saw-trimmers and other makes of saws.

Manzel Model "25" Lubricator—Booklet illustrating and describing centralized automatic lubricating device for application to printing presses and the like.

Ra-zatype Raised Letter Machine—Four-page folder illustrating and describing mechanism and process for producing raised letter printing on stationery, cards, announcements, etc.

Printing Equipment Engineer,
1370 Ontario St., Cleveland, Ohio.

Gentlemen: Please send the literature checked above without obligation.

Name of Company .....
Attention of .....
Position .....
Street Address .....
City ..... State .....

DOLLARS and SENSE

"Things are not so bad," smiled the grocer. "Two years ago those eggs would have cost you twenty cents more per dozen." "Two years ago," replied the purchaser, "when those eggs were fresh, they would have been worth it." This is true of all articles. They are usually worth just what you pay for them. Purchasing agents sometimes think they are saving money by obtaining a lower-priced roller, but ask the pressroom executive what he thinks of cheap rollers. He knows they retard production, and are the most expensive rollers there are. If the delays and spoiled sheets caused by the use of these so-called cheap rollers could be charged to the cost of the rollers it would bring home very definitely the realization that cheap rollers are really costly.

The type of roller that is the most economical depends entirely on the class of printing and the speed of the press. To recommend rollers without being familiar with these conditions is guesswork, and that is usually expensive.

We manufacture Star rubber rollers, Duplex non-meltable composition rollers, Fibrous seasonal composition rollers and cloth covered composition rollers. Each have their own field. We shall be glad to make suggestions.

One Good Roller on Hand is Worth Three on the Way.

BINGHAM BROTHERS COMPANY

(FOUNDED 1849)

ROLLER MAKERS

Member

N.A.P.R.M.

Incorporated 1918

406 Pearl Street . . . . . NEW YORK
521 Cherry Street . . . . PHILADELPHIA
980 Hudson Avenue . . . . ROCHESTER
131 Colvin Street . . . . . BALTIMORE

MACHINE CAST PRINTERS ROLLERS
ESTABLISHED 1849

ANNOUNCING THE NEW INTERTYPE 72-90 CHANNEL MODEL G MIXER

A Cost-Cutting Combination for

1. STRAIGHT COMPOSITION

From a standard 90-channel main magazine accommodating up to and including 18 point faces.

2. DISPLAY COMPOSITION

From a new wide 72-channel magazine accommodating up to and including 30 point wide faces and all condensed 36 point faces. (Heretofore 72-channel main magazines have been limited to 24 point faces.)

3. MIXED COMPOSITION

From both main magazines operated by a standard 90 character keyboard—with instant flip-of-a-finger changes from one magazine to another.

The Commercial Color Press of St. Louis was the first purchaser of a new Model G Intertype. The equipment of their machine includes the new Intertype Quadding and Centering Device.

This new Intertype 72-90 Channel Model G Mixer can be equipped with a standard two or four magazine side unit that will handle full size 18, 24, 30 and 36 point faces.

This new 72-90 channel Intertype is really two machines in one —a fast text machine and an extra wide range display machine. It will greatly increase the peak load capacity of any composing room. It will always be busy. As the pressure of work shifts from straight matter to display and vice versa, this machine is available for a wide range of composition.

For further information write the nearest Intertype office

INTERTYPE CORPORATION

360 Furman Street, Brooklyn, New York; Chicago, 130 North Franklin Street; New Orleans, 816 Howard Avenue; San Francisco, 152 Fremont Street; Los Angeles, 1220 South Maple Avenue; Boston, 80 Federal Street; Canada, Toronto Type Foundry Company Limited, Toronto